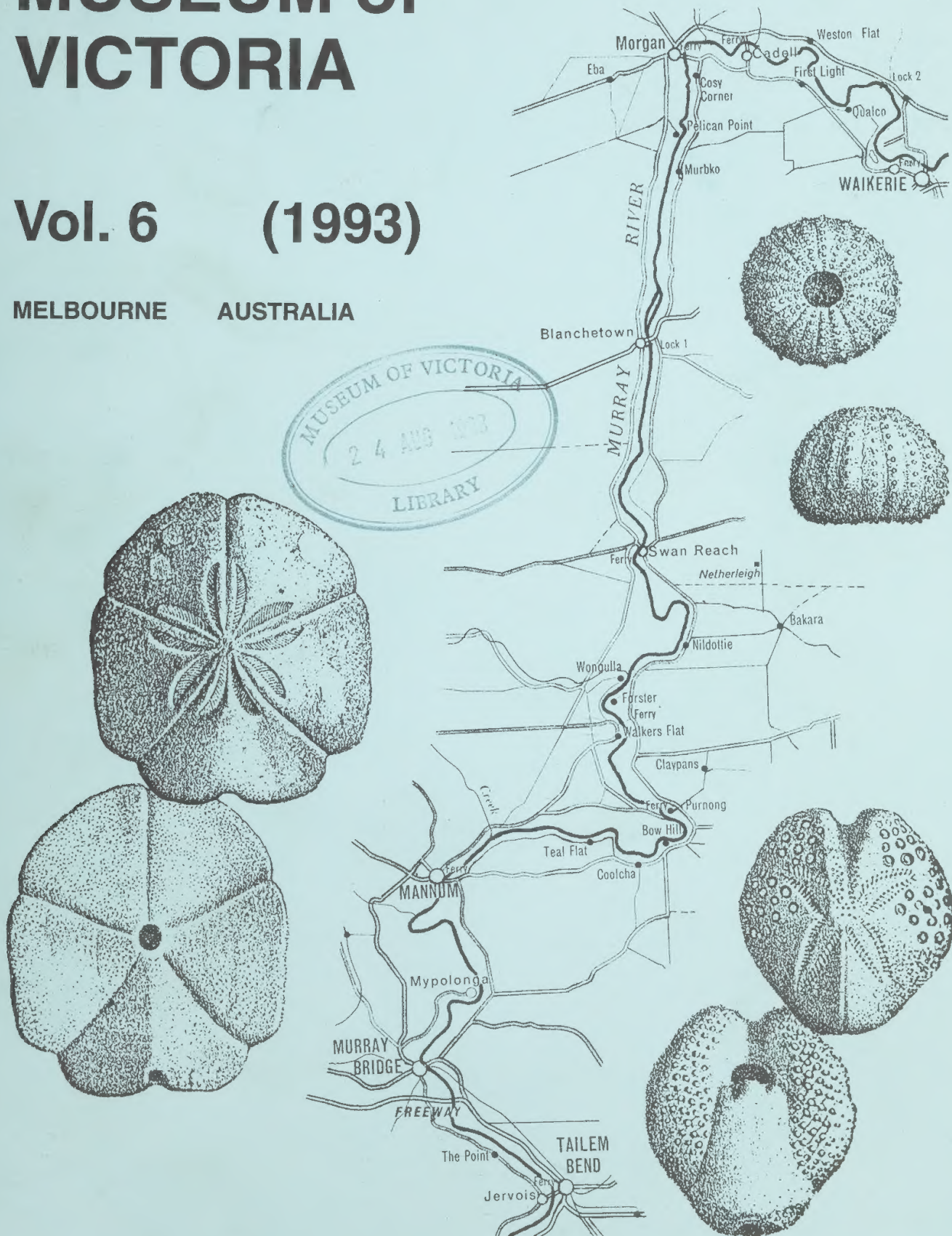


from the  
**MUSEUM of  
VICTORIA**

**Vol. 6 (1993)**

MELBOURNE AUSTRALIA



MUSEUM OF VICTORIA



12844

# OCCASIONAL PAPERS from the MUSEUM of VICTORIA

Vol. 6 (1993)

MELBOURNE AUSTRALIA



*Director* Graham C. Morris  
*Director (Natural Sciences)* David Smith  
*Editor* Gary C. B. Poore

Published by Order of the Council  
July 1993

*Front cover* : Map of the Murray River from Waikerie to Tailem Bend, South Australia upon which are superimposed drawings, from Laube (1869), of the first three echinoids discovered in Australia during the voyage of exploration down the Murray River by Captain Charles Sturt during the years 1830 and 1831. The echinoids are : left, *Monostychia australis* Laube, 1869 [*Scutella* sp. Sturt, 1833]; top right, *Ortholophus woodsi* (Laube, 1869) [*Echinus* sp. Sturt, 1833]; and bottom right, *Lovenia forbesii* (Tenison Woods, 1864) [*Spatangus Hoffmanni* Sturt (non Goldfuss), 1833].



DOCA WINDAL PAPER  
from the  
MUSEUM  
VICTORIA

1901, 1904

1901, 1904

Copyright Museum of Victoria 1993

Table of Contents

Catalogue of Recent Cnidaria type specimens in the Museum of Victoria  
T. N. ~~Stranks~~  
stranks.....1

Australian fossil echinoids: annotated bibliography and list of genera and species  
Francis C. Holmes.....27

The fauna of the Pranjip-Creightons Creek system of northern Victoria  
Nicholas A. O'Connor.....54

### Occasional Papers from the Museum of Victoria

The Museum of Victoria was formed in 1983 by the merger of the National Museum of Victoria (established in 1854) and the Science Museum of Victoria (established in 1870). Among the Museum's objectives are scholarship and education in the fields of natural history, science and technology, and history of human society. The Museum of Victoria publishes two scientific serials to further these objectives, *Memoirs of the Museum of Victoria* (until 1983 *Memoirs of the National Museum of Victoria*) and *Occasional Papers from the Museum of Victoria*.

The *Memoirs* publishes papers on original research in the natural sciences pertinent to Victoria and/or the Museum's collections. All contributions are assessed by independent referees before publication.

The *Occasional Papers* are research documents of sufficient importance to be preserved but which are not appropriate for primary scientific publication. Papers are factual rather than interpretative studies, may be of special local interest, or may be longer than a normal scientific paper. Contributions will be refereed if appropriate.

Two copies of the manuscript with accompanying plates and figures should be submitted to the Scientific

Editor, Museum of Victoria, Swanston Street, Melbourne, Victoria 3000. Authors should consult a recent volume of the *Occasional Papers* to acquaint themselves with the format.

Manuscripts must be typed on A4 paper, double-spaced, on one side of the paper and with ample margins. Final manuscripts on floppy discs are encouraged. Tables, captions to text figures and plates must be attached to the manuscript as final pages. Underlining in the text should be restricted to generic and specific names. Measurements must be in the metric system (SI units).

References should be listed alphabetically at the end of the manuscript. Journal citations must be in full. References to books must give the year of publication, edition, name of publisher and city of publication. Titles of books and names of journals should be underlined.

Photographs must have clear definition and may be submitted as either glossy or flat prints at the actual size for reproduction. Line drawings for text figures should be in black ink on white card or drawing film. Maximum full page size is 177 mm wide by 220 mm, single column width is 86 mm. Clear lettering must be inserted. Original drawings up to twice final size are acceptable.



# Catalogue of Recent Cnidaria type specimens in the Museum of Victoria

T.N. Stranks

Department of Invertebrate Zoology  
Museum of Victoria 285–321 Russell Street Melbourne Victoria 3000 Australia

Abstract. Stranks, T. N. (1993). Catalogue of Recent Cnidaria type specimens in the Museum of Victoria. *Occasional Papers from the Museum of Victoria* 6: 1–26.

Type specimens of 329 nominal species of Recent Cnidaria are held in the Museum of Victoria. Type designations, registration numbers, complete citations and localities are recorded for each species.

## Introduction

Collections of Cnidaria are held in the Department of Invertebrate Zoology and Department of Invertebrate Palaeontology at the Museum of Victoria (formerly National Museum of Victoria) (NMV). The present paper lists primary type material of Recent Cnidaria, representing 329 nominal species, from the Department of Invertebrate Zoology collection. Preliminary details of type specimens of fossil Cnidaria have been given previously (Anon.[K.N. Bell], 1981), and a more comprehensive listing is being prepared by the Department of Invertebrate Palaeontology.

In the early and middle part of this century the Museum acquired the important hydroid collections of William Mountier Bale and Lt-Col. Richard E. Trebilcock, and the scleractinian collection of John Dennant. These workers also obtained through exchange or donation type material of taxa described by G.J. Allman, G. Busk, M. Coughtrey, J.E. Gray, F.W. Hilgendorf, F.W. Hutton, R. von Lendenfeld and J.E. Tenison-Woods.

Hydroids collected during the Royal Society of Victoria's Port Phillip Survey (c. 1886–1895) by J. Bracebridge Wilson were described in various publications by W.M. Bale and Sir W. Baldwin Spencer. Spencer's type material was acquired by the Museum in a donation from the University of Melbourne, Department of Zoology (MUZD) in May 1968.

Possible type specimens of several taxa established by G.H. Kirchenpauer were included as part of the O.W. Sonder Herbarium collection, purchased by the National Herbarium of Victoria, Melbourne. This material was in turn donated by the National Herbarium to the Museum.

From the late nineteenth century to the present, other workers deposited type material directly with the Department, or described new taxa from the Departmental collection. These authors include G.C. Bartlett, M. Blackburn, C.E. Cutress, J.E. Tenison-Woods, H. Utinomi, J. Verseveldt and J.E. Watson.

The present catalogue is intended as an aid to cnidarian systematists. It does not include any critical revision of species, or their current taxonomic status.

## History

Rapid development of the Museum of Victoria's Recent Cnidaria holdings came with the acquisition of the Bale and Trebilcock hydroid collections. Bale and Trebilcock were two of the leading contemporary workers on the systematics of Australian hydroids, and both held major collections of Australian as well as overseas comparative material.

Smith and Watson (1969) detailed aspects of William Mountier

Bale's career as a hydroid researcher, and listed species described by him. Bale (1851–1940) described 126 new species in 13 publications. His collection of more than 1100 microslides was obtained by the Museum in a series of acquisitions in 1923, 1937, 1968 and 1969. An important component of the hydroid collection was the comparative material acquired by Bale. Material solicited for donation from the British Museum (Natural History) (BMNH) included several type specimens described by G.J. Allman from the HMS *Challenger* collection, others described by G. Busk from the HMS *Rattlesnake* collection, and another described by J.E. Gray from the HMS *Endeavour* collection. Bale also received other donations including type material described by M. Coughtrey and F.W. Hutton from the Otago Museum (Dunedin), and material described by R. von Lendenfeld from the Australian Museum (Sydney).

Lt-Col. Richard E. Trebilcock (1880–1976), a contemporary of Bale, worked as a solicitor in Geelong and later in Kerang, Victoria, and was a member of the Geelong Field Naturalists' Club. Trebilcock, either solely or in joint authorship with J.F. Mulder, described 43 new hydroid taxa in seven publications. From a series of donations in 1964, 1969, 1974 and 1975, the Museum acquired Trebilcock's collection of over 1400 microslides. The collection included comparative material of type specimens described by G.J. Allman from the HMS *Challenger* collection. After serving in France with the Australian Imperial Forces during World War I, Trebilcock worked for a period during 1919 at the British Museum (National History), London. He studied hydroid material collected and described from the *Challenger* expedition, and was allowed by A.K. Totton and R. Kirkpatrick of the BMNH to prepare microslide mounts and retain representative slides from many of Allman's (1883; 1888) type colonies (see details in Departmental archival correspondence). An unpublished and incomplete manuscript (c. 1921) titled "Notes on a few *Challenger* and other hydroids in the British Museum (Natural History)" was included in a donation of archival material from the Trebilcock collection. Also included in the collection was comparative material of type specimens described by Bale from the FIS *Endeavour* collections, including microslides prepared by Bale and donated to Trebilcock, as well as material from the type colonies (in spirit) in the Australian Museum, Sydney, sent on exchange to Trebilcock in 1915 by E.A. Briggs and mounted on microslides by Trebilcock himself.

The Bale and Trebilcock holdings also include, apart from the microslide collections, archival material comprising each author's own collection registers, published and unpublished manuscripts (text and figures) and extensive correspondence.

An important recent acquisition for the Museum was a small collection of possible types and other material of G.H.



Kirchenpauer (1808–1887). Kirchenpauer was a Hamburg Senator and later Burgermeister, and member of the Hamburg Museums-Kommission (see Panning, 1956). He had research interests with hydroids, bryozoans and algae from the Herbarium O.W. Sonder (1812–1881) (Hamburg). Some of Kirchenpauer's study material was among and attached to marine algae collected in various localities (particularly in southern Australia) by Baron F. von Mueller, Government Botanist of Victoria and founder of the National Herbarium of Victoria, and sent to the phycologist Sonder for study and identification. The collection returned to Melbourne in 1883 with the National Herbarium's purchase of the Sonder Herbarium (Ducker, 1990). In turn, the zoological component of the collection was donated in 1967 and 1982 by the National Herbarium to the Museum (see Departmental archival correspondence). There were approximately 30 lots of dried hydroid specimens in paper envelopes or pressed on paper with Kirchenpauer's identifications and personal labels. Work is in progress to confirm the provenance of many other lots from the Sonder Herbarium collection, apparently also labelled in Kirchenpauer's hand.

The Department's collection of Kirchenpauer material is significant considering that most of Kirchenpauer's type specimens were believed to have been held at the Zoologisches Museum in Hamburg, and subsequently to have been destroyed or lost during the Second World War. The status of several of Kirchenpauer's species, particularly those previously considered *nomina dubia* (for examples see Millard, 1975) and those with brief original descriptions, may now be reassessed. A catalogue of possible type and other material of Kirchenpauer in the Department collection is planned.

The Dennant collection was purchased by the Museum in 1911. In 1969 the Recent Scleractinia in the collection were transferred from the Department of Invertebrate Palaeontology to the Department of Invertebrate Zoology. John Dennant (1839–1907) worked as a school inspector and as a geologist in western Victoria, and was a member of the Royal Society of Victoria (Anon., 1907a, b). Dennant pursued a range of research interests including scleractinian taxonomy, describing 16 new species of recent corals in two publications. His collection of recent corals comprised approximately 140 lots of dry specimens, mostly dredged in Gulf St Vincent and Spencer Gulf, South Australia, by J.C. Verco from about 1890 to 1906 (Verco, 1935), or off Sydney, New South Wales, by C. Hedley and W.F. Petterd. Dennant's collection also included a type specimen described by J.E. Tenison-Woods.

### Format

Information on types is presented in the following format:

Species, genus, author, year of publication: pagination, figure and plate numbers.

Type category: NMV registration number (number of specimens and preservation), previous registration numbers.

Locality; sampling gear; date collected; collector; station number.

Remarks.

Species remain in the genera proposed in the original descriptions. Genera are placed into families following the primary sources Hyman : (1940), Wells (1956) and Dunn (1982). Where a species is described in a genus not included in the above publications, it remains in the family to which it was assigned by its author. Species are arranged alphabetically within each family.

All original publications are listed in the Bibliography.

The list includes only primary type material (holotypes, paratypes, syntypes and previously designated lectotypes and neotypes). Type definitions are according to the International Code of Zoological Nomenclature (ICZN, 1985).

It should be remembered when consulting this listing that Cnidaria are sometimes composed from aggregations of single polyps organised into colonies (e.g. hydroid forms). Therefore

type designations often refer not to individual zooids, but instead to discrete colonies of polyps. This factor can complicate the isolation of type material considering that a particular type series might consist of a number of elements (e.g. a colony preserved dry or in formalin or ethanol, with a number of smaller pieces of the colony mounted on microslides) (see ICZN, 1985: Article 72(c)(ii)).

The above problem can be illustrated by an example from the Bale Collection. From the one or more hydroid colonies used as the basis for the description of the new species *Halicornaria furcata*, Bale appears to have prepared at least two microslides for his personal collection, and retained at least part of a dry colony in a paper envelope. At the same or at a later time at least two extra microslides seem to have been prepared from the same material and distributed as voucher specimens to R.E. Trebilcock and C.M. Maplestone. The microslides reappeared together in the Museum's collection through the acquisitions of the Bale Collection (which included a part of the Maplestone Collection) and the Trebilcock Collection. All available specimens have been examined and considered for type material.

Another illustration of the same problem was the practice of Bale and Trebilcock, for example, of contacting institutions or individuals to request reference material of particular hydroid species, and being forwarded parts of the type colonies (sometimes labelled as "schizotypes"). At one stage Trebilcock visited the BMNH to research the HMS *Challenger* hydroid collection and was allowed to retain a series of microslides, with portions of type colonies of species described by Allman (1883; 1888). This material is now held in the Museum collection, and much of it is deemed to be type or possible type material.

The fact that early naturalists and museum workers had a practice of obtaining parts of hydroid type colonies as vouchers has made tracking all type material difficult. It is reasonable to assume that there are microslides of parts of type colonies listed here that are still outstanding in other individual or institutional collections. It has not been feasible to trace this material.

For numerous taxa, the absence of designated types was a problem (particularly for many of Bale's and Trebilcock's species that were expected to be found in the Museum collection). Where no clearly labelled type specimens were found, the author's original description was consulted in a search for possible types that considered a particular specimen's provenance, labelling, collection locality and date. In many cases a series of specimens was potentially the basis for a particular new species description, and such specimens have been identified as possible types by inference. The provisions of the ICZN were followed when identifying type or possible type material. Where an original description was based on a unique individual or colony and no labelled holotype was located, possible holotype material has been identified when available. Where it is unclear how many individuals or colonies were examined, or where more than one individual or colony was studied for an original description (and no holotype was designated), and no labelled syntypes were located, possible syntype material has been identified when available. New lectotype designations have not been made, but the identification of possible type material in the present paper would facilitate this process.

In the case of the Bale Collection, very few of the microslides or dry specimens in envelopes bear type notations. However, some microslides not explicitly labelled as types bear catalogue numbers corresponding to entries in Bale's personal register, and a number of these entries carry "type" or "co-type" annotations. These register entries have been invaluable in determining probable members of the type series, but unfortunately Bale did not make such annotations in the register for all of his species (see Smith and Watson, 1969).

New varieties of species designated by alphabetical letters (e.g. *Plumularia setaceoides* var. (a) Mulder and Trebilcock, 1911) are not included in the present list. Species names in manuscript are also omitted.

The present registration numbers (with "F" prefix) in the



Department of Invertebrate Zoology are given. Previous museum registration numbers are also listed. Specimens are either mounted on microslides, preserved in 5% formalin or 70% ethanol (EtOH), or preserved dry in paper envelopes or pressed on paper.

Type localities are as published in the original description, but may include extra information from the specimen labels. Where station numbers were given (e.g. HMS *Challenger* dredging stations), supplementary collection details are included. Higher geographic categories (e.g. ocean, country, state) are included for a consistent format. Where a locality place name is no longer in use, the current place name is provided (e.g. Port Denison is now known as Bowen, Queensland). All non-metric measurements have been given metric equivalents.

In the Bale Collection most microslides are labelled with a date, originally thought to be the date of collection. It now appears instead that the labelling represents the date the slide was mounted. Several microslides bear catalogue numbers that correspond in Bale's register to slides that Bale intended to form the type series, yet the date inscribed on these slides post-dates the publication date of the species. These are presumably slides of material from the type colony that Bale mounted, labelled and dated later, specifically intending them to be members of the type series. They are considered in the present list as probable type specimens.

The Bale, Trebilcock and Dennant collections were acquired by the Museum in instalments over periods of many years, and there was the reasonable possibility of misplacement or loss of specimens. Type or possible type materials of 16 taxa are currently considered missing and these are listed in Appendix 1.

**Class Hydrozoa**  
**Order Hydroida**  
**Suborder Anthomedusae**

**BOUGAINVILLIIDAE**

- australis*, *Bimeria* Blackburn, 1937: 177, text figs 10–12.  
*Holotype*: F57875 (1 microslide), previous no. 70660.  
Victoria, Western Port, Phillip Island, Cowes; on *Pennaria wilsoni*; Nov 1935.

**CLAVIDAE**

- operculata*, *Merona* Watson, 1978: 309, text figs 3a–c.  
*Holotype*: F42807 (1 microslide), previous no. G2807.  
Victoria, Western Port, Crawfish Rock; on *Didemnum patulum*; 12 m; 30 Jul 1967; J.E. Watson.

**CORYNIDAE**

- minima*, *Sarsia* Lendenfeld, 1884d: 584, pl. 21, figs 34, 35.  
*Syntype*: F59279 (1 microslide).  
New South Wales, Port Jackson; laminarian zone, on buoys and submerged ropes; on *Obelia geniculata*; R. von Lendenfeld.  
Remarks: *ex* Bale Coll.

**EUDENDRIIDAE**

- aylingae*, *Eudendrium* Watson, 1985: 208, text figs 75–79.  
*Holotype*: F50529 (formalin).  
Queensland, Great Detached Reef; 11°58'S, 143°58'E; SCUBA; 22 May 1979; A.L. Ayling.
- balei*, *Eudendrium* Watson, 1985: 205, text figs 68–74.  
*Holotype*: F50521 (formalin).  
Victoria, Western Port, Crawfish Rock; 38°20'S, 145°15'E; 10 m; SCUBA; 2 Nov 1971.  
*Paratype*: F50522 (formalin).  
Victoria, Western Port, Crawfish Rock; 10 m; SCUBA; 13 Sep 1968; J.E. Watson.  
*Paratype*: F50530 (formalin).  
Victoria, Western Port, Crawfish Rock; SCUBA; 10 Oct 1981;

- J.E. Watson.  
*Paratype*: F50523 (formalin).  
Victoria, near Seaspray; 38°30'S, 147°10'E; on reef; 15 m; SCUBA; 27 Oct 1981; J.E. Watson.
- Paratype*: F50720 (EtOH).  
Bass Strait, Victoria, 28 km SSW of Marlo; 37°59.0'S, 148°27.0'E; muddy sand and fine shell; 51 m; trawled; 30 Jul 1983; NMV Bass Strait Survey; FV *Silver Gull*; M.F. Gomon and R.S. Wilson; Stn BSS 207.

- corrugatum*, *Eudendrium* Watson, 1985: 191, text figs 24–28.  
*Holotype*: F50506 (formalin).  
Queensland, North Stradbroke Island, NW of Point Lookout, Middle Reef; 27°20'S, 153°35'E; on reef; 100 ft [31 m]; SCUBA; 17 Jun 1981; R.C. Willan.

- merulum*, *Eudendrium* Watson, 1985: 200, text figs 53–58.  
*Holotype*: F50514 (EtOH).  
*Paratypes*: F50515 (EtOH); F50516 (EtOH); F50517 (EtOH).  
Bass Strait, Victoria, 0.5 km S of Clonmel Island; 38°45'S, 146°43'E; from wreck of steamer *Blackbird*; 6 m; SCUBA; 16 Mar 1983; J.E. Watson.

- minutum*, *Eudendrium* Watson, 1985: 183, text figs 1–4.  
*Holotype*: F50520 (EtOH).  
Victoria, Port Phillip Heads; 38°18'S, 144°40'E; channel wall, on dead stem of *Mopsea encrinura*; 12 m; SCUBA; 13 Dec 1982; J.E. Watson.

- nambuccense*, *Eudendrium* Watson, 1985: 185, text figs 9–16.  
*Holotype*: F50508 (formalin).  
New South Wales, Nambucca Heads; 30°40'S, 153°00'E; on *Trichomya hirsuta*; 3 m; SCUBA; 5 Jan 1972; J.E. Watson.

- pusillum*, *Eudendrium* Lendenfeld, 1884a: 352.  
*Syntype*: F59298 (1 microslide).  
New South Wales, Port Jackson; on ascidians and other submerged bodies just below low water mark; R. von Lendenfeld.  
Remarks: *ex* Bale Coll.

**HALOCORDYLIDAE**

- australis*, *Halocordyle* Bale, 1894: 94.  
*Holotype* (probable): F58747 (1 microslide).  
Victoria, Port Phillip Bay, "Limeburners Channel in Capel Sound from near the White Buoy off the Sisters to about half-a-mile beyond Canterbury Jetty"; 6–10 fm [11–18 m]; dredged; Jan 1889; J.B. Wilson; Stn 10.  
Remarks: *ex* Bale Coll. Also labelled "JBW 762," probably referring to a systematic listing.

**HYDRACTINIIDAE**

- arenosa*, *Sacculina* Bale, 1919: 333.  
*Syntypes* (probable): F58728 (6 microslides).  
Remarks: *ex* Bale Coll. Two of the slides are listed in Bale's Register, nos. 3 and 4, as "co-types." Another slide is labelled "JBW 744," probably referring to a systematic listing.  
*Syntype* (probable): F58729 (1 microslide).  
Remarks: *ex* Trebilcock Coll. Listed in Trebilcock's Register, no. 300, as "type." Also labelled "JBW 744," probably referring to a systematic listing.  
Victoria, Port Phillip Bay; J.B. Wilson.
- betkensis*, *Stylactis* Watson, 1978: 312, text figs 5a–h.  
*Holotype*: F42808 (2 microslides), previous no. G2808; F42809 (formalin), previous no. G2809.  
*Paratype*: F42810 (formalin), previous no. G2810.  
Victoria, Mallacoota, Betka River; in estuarine section, just subtidal in *Zostera muelleri* beds; on *Parcanassa burchardi*; 18 Feb 1973; R.J. Plant.
- scandens*, *Saaba* Trebilcock, 1928: 2, pl. 1, figs 1, 1a.  
*Syntypes* (probable).



New Zealand, Island Bay.

Remarks: type specimens not found (see Appendix 1).

#### PENNARIIDAE

*adamsia*, *Pennaria* Lendenfeld, 1884d: 595, pl. 25, figs 45–48, pl. 26, fig. 49.

Syntype: F59281 (1 microslide).

New South Wales, Port Jackson; on bottom of yacht; Mar 1884;

R. von Lendenfeld.

Remarks: *ex* Bale Coll.

*australis*, *Pennaria* Bale, 1884: 45.

Syntype (probable): F58790 (1 microslide).

New South Wales, Clark Island: W.A. Haswell.

Remarks: *ex* Bale Coll.

*rosea*, *Pennaria* Lendenfeld, 1884d: 594, pl. 24, figs 40–42.

Syntype: F59280 (1 microslide).

New South Wales, Port Jackson; laminarian zone; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

#### TUBULARIIDAE

*coccinea*, *Ralpharia* Watson, 1984: 9, text figs 10–18.

Holotype: F42602 (part EtOH, part formalin), previous no. G2602.

Victoria, Western Port, Crawfish Rock; from reef; on *Parerythropodium membranaceum*; 3 m; 12 Sep 1982; J.E. Watson.

*cryptus*, *Hybocodon* Watson, 1984: 7, text figs 1–9.

Holotype: F42601 (part EtOH, part formalin), previous no. G2601.

Victoria, Port Phillip Bay, 3 km off Portsea; on reef; 15 m; 14 Jul 1982; J.E. Watson.

*exsonia*, *Tubularia* Watson, 1978: 303, text figs 1a, b.

Holotype: F42800 (2 microslides), previous no. G2800; F42801 (formalin), previous no. G2801.

Victoria, eastern Bass Strait, Marlin Oil Platform; on sponge; 75 m; 2 Sep 1975; Natural Systems Research Pty. Ltd.

*gracilis*, *Tubularia* Lendenfeld, 1884d: 597, pl. 27, figs 51, 52.

Syntype: F59283 (1 microslide).

New South Wales, Port Jackson; laminarian zone; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

*magnifica*, *Ralpharia* Watson, 1980: 54, text figs 1–24.

Holotype: F43224 (formalin), previous no. G3244.

Paratypes: F43225 (formalin), previous no. G3225;

F43226 (formalin), previous no. G3226.

Victoria, Western Port, Tortoise Head, on *Parerythropodium membranaceum*; 2 m; 3 Jan 1979; J.E. Watson.

*parkeri*, *Calycella* Hilgendorf, 1898: 205, pl. 17, figs 3, 3a–d, pl. 18.

Syntype: F59297 (1 microslide).

New Zealand, Dunedin Harbour; on wharf piles; F.W. Hilgendorf.

Remarks: *ex* Bale Coll.

*ralphii*, *Tubularia* Bale, 1884: 42.

Neotype: F43227 (formalin), previous no. G3227.

Victoria, Hobsons Bay, Yarra River entrance beacon; on *Mytilus edulis* and *Styela clava*; 1–2 m; 3 Apr 1977; J.E. Watson.

Remarks: neotype designated by Watson (1980: 60).

*spongicola*, *Tubularia* Lendenfeld, 1884d: 597, pl. 26, fig. 50.

Syntype: F59282 (1 microslide).

New South Wales, Port Jackson; on horny sponges; 10 m; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

#### ZANCLEIDAE

*marlina*, *Rosalinda* Watson, 1978: 307, text figs 2e–j.

Holotype: F42804 (1 microslide), previous no. G2804; F42805 (formalin), previous no. G2805.

Victoria, eastern Bass Strait, Marlin Oil Platform; on ascidian; 36 m; Jun 1974; Natural Systems Research Pty. Ltd.

Paratype: F42806 (1 microslide), previous no. G2806.

Victoria, eastern Bass Strait, Marlin Oil Platform; on *Balanus trigonus*; 10 m; 2 Sep 1974; Natural Systems Research Pty. Ltd.

#### Suborder Leptomedusae

#### CAMPANULARIIDAE

*ambiplica*, *Campanularia* Mulder and Trebilcock, 1914a: 11, pl. 2, figs 3, 4.

Syntype: F57981 (1 microslide).

Victoria, Thompsons Creek [near Torquay] [as “Bream Creek”]; on *Ballia callitricha*.

Remarks: *ex* Trebilcock Coll.

*angulata*, *Orthopyxis* Bale, 1914c: 82, pl. 11, fig. 4, pl. 12, fig. 4.

Syntypes (probable): F59343 (2 microslides).

Victoria, Port Phillip Bay; J.B. Wilson.

Remarks: *ex* Bale Coll. The slides are listed in Bale’s Register, nos. 8 and 9, as “co-types.”

*angulosa*, *Obelia* Bale, 1888: 752, pl. 12, fig. 3.

Syntypes (probable): F58756 (2 microslides).

New South Wales, Parramatta River.

Remarks: *ex* Bale Coll. The slides are listed in Bale’s Register, nos. 17 and 18, as “co-types.”

*australis*, *Obelia* Lendenfeld, 1884d: 604.

Syntype: F59284 (1 microslide).

New Zealand, Sumner [near Lyttelton]; laminarian zone; R. von Lendenfeld.

Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 16, as “type.”

*bilabiata*, *Campanularia* Coughtrey, 1875: 291, pl. 20, figs 46–49.

Syntype (possible): F59295 (1 microslide).

New Zealand, Timaru; on algae; 1–3 fm [2–5 m]; M. Coughtrey.

Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum.

*campanularia*, *Eucopeella* Lendenfeld, 1883: 497, pls 27–32.

Syntype: F59400 (1 microslide).

Australia, south coast [as “Südrande des australischen Kontinents”]; on laminarians below the low water mark; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

*costata*, *Campanularia* Bale, 1884: 56, pl. 1, fig. 3.

Syntype (probable): F58793 (1 microslide).

Northern Territory, Port Darwin; on *Idia pristis*; T.D. Smeaton.

Remarks: *ex* Bale Coll.

*coughtreyi*, *Obelia* Bale, 1924: 230, text fig. 2.

Syntypes (probable): F58217 (2 microslides).

New Zealand, Taylors Mistake [near Sumner]; C. Chilton.

Remarks: *ex* Bale Coll. One of the slides is listed in Bale’s Register, no. 21, as “co-type.”

*delicata*, *Orthopyxis* Trebilcock, 1928: 3, pl. 2, figs 1, 1a–f.

Syntype: F57888 (1 microslide).

New Zealand, Dunedin, St Clair; on algae and polyzoa; 3 May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll.

*formosa*, *Orthopyxis* Trebilcock, 1928: 2, pl. 1, figs 2, 2a–e.



*Syntype*: F57887 (1 microslide).

New Zealand, Auckland Harbour entrance; on floating seaweed; Apr–May 1923; R.E. Trebilcock.

Remarks: ex Trebilcock Coll.

***marginata, Campanularia*** Bale, 1884: 54, pl. 1, fig. 2.

*Syntype* (probable): F58791 (1 microslide).

Victoria, Queenscliff.

Remarks: ex Bale Coll. The slide is listed in Bale's Register, no. 27, as "from type specimen."

*Syntype* (probable): F58792 (1 microslide).

Victoria, Portland; C.M. Maplestone.

Remarks: ex Bale Coll.

***nodosa, Obelia*** Bale, 1924: 230, text fig. 1.

*Syntypes* (probable): F58216 (3 microslides).

New Zealand, Auckland, Waitakerei; C. Chilton.

Remarks: ex Bale Coll. One of the slides is listed in Bale's Register, no. 22, as "co-type."

***pearsonensis, Clytia*** Watson, 1973: 159, text fig. 2.

*Holotype*: F41914 (1 microslide), previous no. G1914.

South Australia, Pearson Island; rough watered side of island; on *Thecocarpus divaricatus cystifera*; 22 m; SCUBA; 7 Jan 1969; J.E. Watson; Stn A.

*Paratype*: F41915 (1 microslide), previous no. G1915.

South Australia, Pearson Island; rough watered side of island; on bryozoa; 34 m; SCUBA; 7 Jan 1969; J.E. Watson; Stn A.

***platycarpa, Orthopyxis*** Bale, 1914c: 79, pl. 11, fig. 3, pl. 12, fig. 3.

*Syntype* (probable): F58737 (1 microslide).

Victoria, "in or near Port Phillip [Bay]."

Remarks: ex Bale Coll. The slide is listed in Bale's Register, no. 7, as "co-type."

***pulchratheca, Campanularia*** Mulder and Trebilcock, 1914a: 11, pl. 2, figs 1, 2.

*Syntypes*: F57982 (2 microslides).

Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].

Remarks: ex Trebilcock Coll.

***pumila, Campanularia*** Bale, 1914a: 4, pl. 1, figs 6–8.

*Syntype* (probable).

Great Australian Bight; on *Syntheicum subventricosum*; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.

Remarks: type specimen not found (see Appendix 1).

***retroflexa, Campanularia*** Allman, 1888: 21, pl. 11, figs 1, 1a.

*Holotype* (possible): F60327 (2 microslides).

Pacific Ocean, Hawaii, Honolulu; 20–40 fm [37–73 m]; dredged; Jul–Dec 1875; HMS *Challenger*.

Remarks: ex Trebilcock Coll., ex BMNH. Considered a possible holotype by inference.

***rufa, Campanularia*** Bale, 1884: 54, pl. 1, fig. 1.

*Holotype* (probable): F52216 (1 microslide).

Queensland, Holbourne Islands [as "Holborn Island"]; 20 fm [37 m]; W.A. Haswell.

Remarks: ex Bale Coll.

***serrulata, Campanularia*** Bale, 1888: 757, pl. 12, fig. 4.

*Syntype* (probable): F58758 (1 microslide).

New South Wales, Port Jackson; on *Tubularia* sp.

Remarks: ex Bale Coll.

***spinulosa, Campanularia*** Bale, 1888: 756, pl. 12, figs 5–7.

*Syntype* (probable): F58757 (1 microslide).

New South Wales, Port Jackson; on *Tubularia* sp.

Remarks: ex Bale Coll. This species is listed in the plate legend and on the slide label as *C. bispinosa*, probably an earlier manuscript name.

***stolonifera, Clytia*** Blackburn, 1938: 325, text figs 9, 10.

*Holotype*: F57880 (1 microslide), previous no. 70666.

South Australia, Spencer Gulf, Reevesby Island; on *Posidonia* sp.; 4 fm [7 m]; Dec 1936; McCoy Society for Field Investigation and Research Expedition.

***tridentata, Campanularia*** Bale, 1894: 98, pl. 3, fig. 3.

*Syntype* (probable): F58748 (1 microslide).

Victoria, Port Phillip Bay; "bounded on the E, by a line from the W Quarantine boundary flagstaff to the Popes Eye Buoy. On the N, line from Popes Eye Buoy to Point Lonsdale. On the W, line from Point Nepean to the channel marks on the shore in Lonsdale Bight"; 8–21 fm [15–38 m]; dredged; Jan 1888; J.B. Wilson; Stn 1.

Remarks: ex Bale Coll. Also labelled "JBW 761," probably referring to a systematic listing.

***undulata, Eucopella*** Mulder and Trebilcock, 1914a: 10, pl. 2, figs 5, 5a, 6, 7.

*Syntype*: F57974 (1 microslide).

Victoria, Barwon Heads.

*Syntype*: F59346 (EtOH).

Victoria, Barwon Heads; on *Oymodocea zosterifolia*; 17 Feb 1913, R.E. Trebilcock.

*Syntypes*: F57973 (2 microslides).

Victoria, Torquay; Jan 1914.

Remarks: ex Trebilcock Coll.

***wilsoni, Orthopyxis*** Bale, 1914c: 78, pl. 11, fig. 5, pl. 12, fig. 5.

*Syntype* (probable): F59342 (1 microslide).

Remarks: ex Bale Coll. The slide is listed in Bale's Register, no. 5, as "co-type."

*Syntypes* (probable): F58736 (2 microslides).

Remarks: ex Trebilcock Coll. Also labelled "JBW 743a," probably referring to a systematic listing.

Victoria, Port Phillip Bay; J.B. Wilson.

#### CAMPANULINIDAE

***humilis, Campanulina*** Bale, 1924: 235, text fig. 5.

*Holotype* (probable).

"Hull of *Terra Nova*"; D.G. Lillie.

Remarks: type specimen not found (see Appendix 1).

#### CLATHROZONIDAE

***wilsoni, Clathrozon*** Spencer, 1891: 123, pls 17–20.

*Syntypes* (probable): F58416 (1 microslide);

F58417 (1 microslide).

Victoria, Bass Strait, within 5 miles [8 km] of Port Phillip Heads; 20–22 fm [37–40 m]; dredged; J.B. Wilson.

Remarks: the slides are labelled (apparently in Spencer's hand) "*Clathrozon* l.s." and "*Clathrozon* t.s." respectively, and probably comprise part of the material that the species description was based on. No spirit or dry type colonies of *C. wilsoni* have been located in the collections. A specimen in EtOH (F60367) purported to be the paratype of *C. wilsoni* (part of which was donated to and examined by Hirohito (1971)) is not the type specimen; it was collected in 1893 (not 1873) at Port Phillip, Victoria by J.B. Wilson, and identified by W.B. Spencer.

*Syntype* (possible): F58414 (1 microslide).

Victoria, near Port Phillip Heads; J.B. Wilson.

Remarks: ex Bale Coll. Also labelled "JBW 748," probably referring to a systematic listing. Considered a possible syntype by inference.

*Syntype* (possible): F58415 (1 microslide).

Victoria, near Port Phillip Heads; J.B. Wilson.

Remarks: ex Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 281, as "from Bale." Also labelled "JBW 748," probably referring to a systematic listing. Considered a possible syntype by inference.

## GRAMMARIDAE

*insignis*, *Grammaria* Allman, 1888: 49, pl. 23, figs 3, 3a, b.

Syntype: F58211 (1 microslide).

Indian Ocean, off Marion Island; 46°43.0'S, 38°04.5'E; volcanic sand; 50–75 fm [92–137 m]; dredged; 27 Dec 1873; HMS *Challenger*; Stn 145.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 212, as "from type."

*stentor*, *Grammaria* Allman, 1888: 48, pl. 23, figs 1, 1a.

Syntype: F59311 (1 microslide).

Indian Ocean, Kerguelen Island, Royal Sound; 49°28.0'S, 70°13.0'E; volcanic mud; 28–60 fm [51–110 m]; dredged; 20 Jan 1874; HMS *Challenger*; Stn 149D.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 213, as "from type."

## HALECIIDAE

*australis*, *Ophiodes* Bale, 1919: 336, pl. 16, fig. 1.

Syntype (probable): F58731 (1 microslide).

Victoria, Port Phillip Heads; J.B. Wilson.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 42, as "co-type."

Syntypes (probable): F58732 (2 microslides).

Victoria, Port Phillip Heads; 1885; J.B. Wilson.

Remarks: *ex* Bale Coll. One of the slides is listed in Bale's Register, no. 43, as "co-type."

Syntype (probable): F58733 (1 microslide).

Victoria, Port Phillip Heads, "Limeburners Channel in Capel Sound from near the White Buoy off the Sisters to about half a-mile beyond Canterbury Jetty"; 6–10 fm [11–18 m]; dredged; Jan 1888; J.B. Wilson; Stn 10.

Remarks: *ex* Bale Coll. Also labelled "JBW 760," probably referring to a systematic listing.

Syntype (probable): F58730 (1 microslide).

New South Wales, Port Jackson, Green Point.

Remarks: *ex* Bale Coll.

*blackburni*, *Ophiodissa* Watson, 1973: 166, text figs 10–12.

Holotype: F41927 (1 microslide), previous no. G1927; F42092 (formalin), previous no. G2092.

South Australia, Pearson Island; sheltered side of island; on *Herdmania momus*; 27 m; SCUBA; 9 Jan 1969; J.E. Watson.

Paratype: F41928 (1 microslide), previous no. G1928;

F42093 (formalin), previous no. G2093.

South Australia, Pearson Island; sheltered side of island; on vertical face, bryozoa; 24–27 m; SCUBA; 9 Jan 1969; J.E. Watson; Stn D.

Paratype: F41929 (1 microslide), previous no. G1929.

South Australia, Pearson Island; sheltered side of island; on *Synthecium* sp.; 24 m; SCUBA; 9 Jan 1969; J.E. Watson; Stn D.

*bruniensis*, *Halecium* Watson, 1975: 161, text figs 7–15.

Holotype: F42494 (1 microslide), previous no. G2494;

F42495 (formalin), previous no. G2495.

Tasmania, Penguin Island [E of Bruny Island]; on sponge and bryozoa in crevice; 10–22 m; SCUBA; 11 Feb 1972; J.E. Watson.

*buchananae*, *Halecium* Blackburn, 1937: 174, text figs 4, 5.

Holotype: F57873 (1 microslide), previous no. 70658.

Paratype: F57874 (1 microslide), previous no. 70659.

Victoria, Western Port, Balnarring; washed up on algae; 14 Jun 1936.

*corrugatissimum*, *Halecium* Trebilcock, 1928: 7, pl. 3, figs 1, 1a–f.

Syntype: F57890 (1 microslide).

New Zealand, Dunedin, St Clair; May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll.

*diadala*, *Scoresbia* Watson, 1969: 112, text figs 1–7, pl. 1.

Holotype: F41490 (1 microslide), previous no. G1490.

Paratypes: F41491 (1 microslide), previous no. G1491;

F41492 (1 microslide), previous no. G1492;

F41493 (1 microslide), previous no. G1493;

F41494 (1 microslide), previous no. G1494.

South Australia, Gulf St Vincent, 3 km off Semaphore; on

*Zonaria crenata*; 7 m; 28 Dec 1968; J.E. Watson.

Paratypes: F41495 (1 microslide), previous no. G1495;

F41496 (1 microslide), previous no. G1496.

South Australia, Encounter Bay, West Island; on *Zonaria crenata*; 25 m; 29 Aug 1968; J.E. Watson.

*dichotomum*, *Halecium* Allman, 1888: 13, pl. 6.

Syntype: F58205 (1 microslide).

South Africa, Cape of Good Hope, Simons Bay; 10–20 fm [18–37 m]; Oct–Dec 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 138, and labelled "from type."

*dichotomus*, *Diplocyathus* Allman, 1888: 17, pl. 8.

Syntypes: F58206 (2 microslides).

Torres Strait, Queensland, Cape York, off Somerset; 8–12 fm [15–22 m]; dredged; Aug–Sep 1874; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 137 and 137a, and labelled "from type." Trebilcock reclassified the slides as *Ophiodissa dichotoma*.

*expansum*, *Halecium* Trebilcock, 1928: 7, pl. 3, figs 2, 2a–c, pl.

4, figs 2, 2a, b.

Syntype: F57891 (1 microslide).

New Zealand, Dunedin, St Clair; on algae in rock pools; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll.

*flexile*, *Halecium* Allman, 1888: 11, pl. 5, figs 2, 2a.

Syntype: F58204 (1 microslide).

Indian Ocean, off Marion Island; 46°43.0'S, 38°04.5'E; volcanic sand; 50 fm [92 m]; dredged; 27 Dec 1873; HMS *Challenger*; Stn 145.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 139, and labelled "from type."

*gracile*, *Halecium* Bale, 1888: 759, pl. 14, figs 1–3.

Syntypes (probable): F58760 (2 microslides).

New South Wales, Port Stephens; on *Aglaophenia* sp.

Remarks: *ex* Bale Coll. The slides are listed in Bale's Register, nos. 40 and 41, as "co-types."

*lenticulare*, *Halecium* Trebilcock, 1928: 6, pl. 3, figs 3, 3a–d, pl.

4, figs 1, 1a, b.

Holotype: F57889 (1 microslide).

Holotype (possible): F57938 (EtOH).

New Zealand, Bluff; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock. F57938 may be the remainder of the holotype colony, and is included here as possible type material.

Paratypes (possible): F57942 (2 microslides).

New Zealand, Dunedin, St Clair; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. These slides may be part of the material examined for the original description, and are listed here as possible paratypes.

*luteum*, *Halecium* Watson, 1975: 163, text figs 16–18.

Holotype: F42496 (1 microslide), previous no. G2496;

F42497 (formalin), previous no. G2497.

Paratype: F42498 (1 microslide), previous no. G2498.

Tasmania, Penguin Island [E of Bruny Island]; on sponge and rock in cavern; 15 m; SCUBA; 20 Feb 1972; J.E. Watson.

*parvulum*, *Halecium* Bale, 1888: 760, pl. 14, figs 4, 5.

Syntype (probable): F58761 (1 microslide).

New South Wales, Bondi Bay; on sponge.



Remarks: *ex* Bale Coll.

***robustum, Halecium* Allman, 1888: 10, pl. 4.**

Syntypes: F58202 (2 microslides).

Indian Ocean, Kerguelen Island, off Cumberland Bay; 48°43'S, 69°15'E; volcanic mud; 105 fm [192 m]; dredged; 29 Jan 1874; HMS *Challenger*; Stn 149J.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 141 and 141a, and labelled "from type." Trebilcock reidentified and labelled the slides as *Opiodissa arborea*.

***telescopicum, Halecium* Allman, 1888: 10, pl. 5, figs 1, 1a.**

Syntype: F58203 (1 microslide).

New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E; hard ground; 30–35 fm [55–64 m]; dredged; 3 Jun 1874; HMS *Challenger*; Stn 163B.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 140, and labelled "from type."

## LAFOEIDAE

***angulata, Cryptolaria* Bale, 1914b: 166, pl. 35, fig. 1.**

Syntypes (probable): F58335 (6 microslides).

Great Australian Bight; 100 fm [183 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Two of the slides are listed in Bale's Register, nos. 30 and 31, as "co-types." Another slide is listed in Trebilcock's Register, no. 292, as "type."

***annulata, Reticularia* Watson, 1973: 164, text figs 5, 6.**

Holotype: F41923 (1 microslide), previous no. G1923; F42091 (formalin), previous no. G2091.

South Australia, Pearson Island, sheltered side of island; on small calcareous bryozoa; 17 m; SCUBA; 9 Jan 1969; S.A. Shepherd; Stn D.

***crassicaulis, Cryptolaria* Allman, 1888: 41, pl. 19, figs 3, 3a.**

Syntypes: F58209 (2 microslides).

Atlantic Ocean, off Ascension Island; 7°54.33'N, 14°28.33'W; volcanic sand; 420 fm [769 m]; dredged; 3 Apr 1876; HMS *Challenger*; Stn 344.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, no. 210, as "part of type."

***cyathifera, Lictorella* Allman, 1888: 36, pl. 11, figs 3, 3a.**

Syntype: F58207 (1 microslide).

Pacific Ocean, off New Hebrides; 16°45'S, 168°07'E; volcanic sand; 63–130 fm [115–238 m]; 18 Aug 1874; HMS *Challenger*; Stn 177.

Remarks: *ex* Trebilcock Coll., *ex* BMNH.

***gracilis, Cryptolaria* Allman, 1888: 42, pl. 20, figs 2, 2a.**

Syntypes: F58210 (2 microslides).

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 211 and 211a, as "from type."

Syntypes: F59310 (2 microslides).

Remarks: *ex* Bale Coll., *ex* BMNH. The slides are labelled as "schizotypes."

Pacific Ocean, near New Zealand; 37°34'S, 179°22'E; blue mud; 700 fm [1281 m]; trawled; 10 Jul 1874; HMS *Challenger*; Stn 169.

***pectinata, Perisiphonia* Allman, 1888: 45, pl. 21, figs 2, 2a, b.**

Syntype (possible): F60329 (1 microslide).

Pacific Ocean, off New Zealand; 37°34'S, 179°22'E; blue mud; 700 fm [1281 m]; trawled; 10 Jul 1874; HMS *Challenger*; Stn 169.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 214. Trebilcock reclassified and labelled the slide as *Zygophylax pectinata*. Considered a possible syntype by inference.

***pulchella, Cryptolaria* Allman, 1888: 40, pl. 19, figs 2, 2a.**

Syntypes: F58208 (3 microslides).

Pacific Ocean, Hawaii, Honolulu; 20–40 fm [37–73 m]; dredged; Jul–Dec 1875; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 209, 209a, b, as "part of type."

***quadriseriata, Perisiphonia* Trebilcock, 1928: 4, pl. 2, figs 2, 2a–d.**

Holotype (possible): F52217 (2 microslides).

New Zealand, Wellington, Island Bay; washed ashore; 24 Apr 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. The slides are not labelled as types, but are considered as possibly part of the holotype by inference.

***scandens, Lafoea* Bale, 1888: 758, pl. 13, figs 16–19.**

Syntypes (probable): F58759 (2 microslides).

New South Wales, Port Stephens; mostly on *Sertularella divaricata subdichotoma*.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 36, as "co-type."

## LINEOLARIIDAE

***flexuosa, Lineolaria* Bale, 1884: 62, pl. 1, figs 7–9.**

Syntypes (probable): F58794 (1 microslide);

F58795 (1 microslide);

F60229 (dry).

Victoria, Port Phillip Bay, Williamstown; on algae.

Remarks: *ex* Bale Coll.

***inarmata, Lineolaria* Blackburn, 1938: 321, text figs 4–8.**

Holotype: F57878 (1 microslide), previous no. 70664.

Paratype: F57879 (1 microslide), previous no. 70665.

South Australia, Spencer Gulf, Reevesby Island; on *Posidinia* sp.; 2–2.5 fm [4–5 m]; Dec 1936; McCoy Society for Field Investigation and Research Expedition.

## LOVENELLIDAE

***briggsi, Lovenella* Mulder and Trebilcock, 1915: 57, pl. 9, figs 3, 3a–f.**

Syntypes (possible): F57997 (4 microslides).

Victoria, Corio Bay.

Syntypes (possible): F57998 (3 microslides).

Victoria, Torquay; 18 Feb 1915.

Remarks: *ex* Trebilcock Coll. The slides are not labelled as types, but are considered possible syntypes by inference.

## PLUMULARIIDAE

***abietina, Plumularia* Allman, 1883: 21, pl. 3.**

Holotype (possible): F60247 (1 microslide).

Indian Ocean, off Prince Edward Island; 150 fm [275 m]; dredged; Dec 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered possibly part of the holotype by inference.

***acanthocarpa, Aglaophenia* Allman, 1876: 274, pl. 21, figs 1–4.**

Holotype (possible): F59304 (1 microslide).

Remarks: *ex* Bale Coll., *ex* BMNH 99.7.1.6201. The slide is listed in Bale's Register, no. 265, as "schizotype."

Paratypes: F59305 (2 microslides).

Remarks: *ex* Bale Coll., *ex* BMNH. One slide is listed in Bale's Register, no. 266, as "from paratype."

New Zealand.

***aglaopheniaformis, Plumularia* Mulder and Trebilcock, 1909: 32, pl. 1, fig. 7.**

Syntype: F57967 (1 microslide).

Victoria, Torquay.

Remarks: *ex* Trebilcock Coll.

***aglaophenoides, Plumularia* Bale, 1884: 126, pl. 10, fig. 6.**

- Holotype* (probable): F58824 (1 microslide); F58825 (dry).  
Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 174, as "co-type."  
*Holotype* (probable): F59063 (1 microslide).  
Remarks: *ex* Bale Coll., *ex* Maplestone Coll.  
New South Wales, Broughton Islands; 25 fm [46 m]; W.A. Haswell.
- alata*, *Plumularia* Bale, 1888: 782, pl. 19, figs 6–10.  
*Syntypes* (probable): F58775 (2 microslides).  
?New Zealand or Victoria; on red frondose alga; Dr Ralph.  
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 199, as "co-type." Exact locality of syntypes unknown.
- alternatella*, *Plumularia* Mulder and Trebilcock, 1911: 121, pl. 3, figs 1, 1a, 2.  
*Syntypes*: F57991 (2 microslides).  
Victoria, Spring Creek [near Barwon Heads].  
Remarks: *ex* Trebilcock Coll.
- armata*, *Aglaophenia* Bale, 1914b: 175, pl. 38, figs 3, 4.  
*Syntypes* (probable): F58340 (6 microslides).  
Queensland, off Port Curtis, Capricorn Group, NE of North Reef; 1909–1914; FIS *Endeavour*.  
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 307 and 308, as "co-types." Another two slides are listed in Trebilcock's Register, nos. 174 and 174a.
- armata*, *Plumularia* Allman, 1883: 22, pl. 4, figs 3, 4.  
*Holotype* (possible): F60321 (1 microslide).  
New South Wales, off Port Jackson; 36°59'S, 150°20'E; red clay; 30–35 fm [55–64 m]; dredged; 4 Apr 1874; HMS *Challenger*; Stn 163A.  
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered possibly part of the holotype by inference.
- ascidioides*, *Aglaophenia* Bale, 1882: 32, pl. 13, figs 5, 5a, b.  
*Syntypes* (probable): F58901 (1 microslide);  
F58902 (1 microslide);  
F59029 (dry).  
Remarks: *ex* Bale Coll. The two slides are listed in Bale's Register (nos. 234 and 235) as "co-types" and are labelled as *Halicornaria ascidioides*.  
*Syntypes* (probable): F59065 (1 microslide).  
Remarks: *ex* Bale Coll., *ex* Maplestone Coll.  
Victoria, Queenscliff; W.M. Bale.
- asymmetrica*, *Plumularia* Bale, 1914a: 29, pl. 4, figs 2, 3.  
*Syntypes* (probable): F58655 (4 microslides);  
F58656 (3 microslides).  
Remarks: *ex* Bale Coll. Two of the slides are listed in Bale's Register, nos. 196 and 197, as "co-types."  
*Syntype* (probable): F58657 (1 microslide).  
Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).  
Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.
- aurea*, *Halicornaria* Watson, 1973: 197, text figs 74–76.  
*Holotype*: F42088 (1 microslide), previous no. G2088;  
F42107 (formalin), previous no. G2107.  
South Australia, Pearson Island, rough watered side of island; epilithic on rock walls; 33 m; SCUBA; 7 Jan 1969; J.E. Watson.  
*Paratypes*: F42089 (1 microslide), previous no. G2089;  
F42108 (formalin), previous no. G2108.  
South Australia, Pearson Island, rough-watered side of island; epilithic; 33 m; SCUBA; 10 Jan 1969; J.E. Watson.  
*Paratypes*: F42090 (1 microslide), previous no. G2090;  
F42109 (formalin), previous no. G2109.  
South Australia, Pearson Island, rough watered side of island; epilithic on rock walls; 27–30 m; SCUBA; 7 Jan 1969; J.E. Watson.
- aurita*, *Plumularia* Bale, 1888: 784, pl. 19, figs 15–19.  
*Syntype* (probable): F58776 (1 microslide).  
New South Wales, Botany.  
Remarks: *ex* Bale Coll.
- australiensis*, *Plumularia* Watson, 1973: 193, text figs 68–71.  
*Holotype*: F42067 (1 microslide), previous no. G2067;  
F42106 (formalin), previous no. G2106.  
*Paratypes*: F42068 (1 microslide), previous no. G2068;  
F42069 (1 microslide), previous no. G2069;  
F42070 (1 microslide), previous no. G2070;  
F42071 (1 microslide), previous no. G2071.  
South Australia, Pearson Island, rough watered side of island; on sponge; 20–25 m; SCUBA; 12 Jan 1969; J.E. Watson.
- australis*, *Plumularia obliqua* Kirchenpauer, 1876: 49, pl. 6, fig. 10.  
*Syntype* (possible): F58239 (dry).  
Victoria, Port Phillip Bay [as "Port Philip (Australien)"]; on *Zostera* sp.; c.1865.  
Remarks: *ex* Herbarium O.W. Sonder Coll. Labelled as *Monopyxis australis*, an earlier manuscript name. Considered a possible syntype by inference.
- avicularis*, *Halicornopsis* Bale, 1882: 26, pl. 13, figs 3, 3a, b.  
*Syntypes* (probable): F59340 (1 microslide);  
F58896 (1 microslide);  
F58897 (1 microslide).  
Victoria, Griffiths Point; J.R.Y. Goldstein.  
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 156, as "co-type."
- baileyi*, *Halicornaria* Bale, 1884: 177, pl. 13, fig. 4, pl. 16, fig. 2.  
*Holotype* (probable): F58837 (1 microslide);  
F59341 (1 microslide);  
F58838 (dry).  
Victoria, Port Phillip Bay, Schnapper Point; J.F. Bailey.  
Remarks: *ex* Bale Coll. The two slides are listed in Bale's Register, nos. 243 and 244, as "co-types." The register also details a *Halicornaria humilis* epizoon on the specimen.
- bakeri*, *Aglaophenia* Bale, 1919: 353, pl. 17, figs 7, 8.  
*Syntypes* (probable): F58734 (5 microslides).  
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 301 and 302, as "co-types."  
*Syntype* (probable): F58735 (1 microslide).  
Remarks: *ex* Trebilcock Coll.  
Victoria, Western Port; F.H. Baker.
- balei*, *Plumularia* Bartlett, 1907b: 65, unnumbered pl. fig.  
*Syntypes*: F57885 (1 microslide), previous no. 62764;  
F57968 (1 microslide).  
Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].
- banksii*, *Plumularia* Gray, 1843: 294.  
*Syntype*: F59300 (1 microslide).  
New Zealand, Dusky Bay; Oct 1769 Apr 1770; HMS *Endeavour*; J. Banks.  
Remarks: *ex* Bale Coll., *ex* Banks Coll., BMNH 94.5.4.1. The slide is labelled as "schizotype," under the name *Hemicarpus banksii*.
- billardi*, *Aglaophenia* Bale, 1914a: 33, pl. 3, fig. 3, pl. 6, fig. 3.  
*Syntypes* (probable): F58658 (10 microslides);  
F58659 (6 microslides).  
Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.  
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 283 and 284, as "co-types." Another two slides are listed in Trebilcock's Register, nos. 184 and 185.
- birostrata*, *Halicornaria* Bale, 1914a: 49, pl. 4, fig. 5, pl. 7, fig. 6.  
*Syntypes* (probable): F58671 (4 microslides);  
F58672 (1 microslide).



Great Australian Bight; on *Aglaophenia megalocarpa*; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 232 and 233, as "co-types." Another slide is listed in Trebilcock's Register, no. 172.

**biseptata**, *Kirchenpaueria* Blackburn, 1938: 318, text fig. 3.

*Holotype*: F57877 (1 microslide), previous no. 70662.

South Australia, Spencer Gulf, Reevesby Island; on *Posidonia* and *Cymodocea*; 5 fm [9 m]; Dec 1936; McCoy Society for Field Investigation and Research Expedition.

*Paratype*: F57881 (1 microslide), previous no. 70663.

South Australia, Spencer Gulf, Hareby Island; on *Posidonia* and *Cymodocea*; Jan 1937; McCoy Society for Field Investigation and Research Expedition.

**brevicaulis**, *Aglaophenia* Kirchenpauer, 1872: 41, pl. 1, fig. 20, pl. 5, fig. 19.

*Syntype* (possible): F58236 (dry).

New South Wales, Ballina [as "Ballina, Australien"].

Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible syntype by inference.

**briggsi**, *Aglaophenia divaricata* Bale, 1926: 22, text fig. 5.

*Syntype* (probable): F58727 (1 microslide).

New South Wales, Port Jackson.

Remarks: *ex* Bale Coll.

**buskii**, *Plumularia* Bale, 1884: 125, pl. 10, fig. 3, pl. 19, figs 34, 35.

*Syntypes* (probable): F58822 (1 microslide);

F58823 (1 microslide).

Victoria, Griffiths Point; J.R.Y. Goldstein.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 167, as "co-type."

**calamus**, *Aglaophenia* Allman, 1883: 39, pl. 12, figs 5–8.

*Syntype* (possible): F60325 (1 microslide).

Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 143. Trebilcock reidentified and labelled the slide as *A. pluma*. Considered a possible syntype by inference.

**caliculata**, *Plumularia* Bale, 1888: 780, pl. 20, figs 9–11.

*Syntype* (probable): F58774 (1 microslide).

New South Wales, Port Jackson.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 182, as "co-type."

*Syntypes* (probable): F58772 (2 microslides).

New South Wales, Bondi Bay.

Remarks: *ex* Bale Coll.

*Syntype* (probable): F58773 (1 microslide).

New South Wales, Bondi Bay.

Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 277, as "part of type."

**calycifera**, *Aglaophenia* Bale, 1914b: 178, pl. 37, figs 3, 4.

*Syntypes* (probable): F58401 (6 microslides).

Great Australian Bight; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 309 and 310, as "co-types." Another slide is listed in Trebilcock's Register, no. 171. Exact locality of these specimens unknown.

*Syntypes* (probable): F58402 (3 microslides).

Great Australian Bight; 130°40'E; 160 fm [293 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).

**campanuliformis**, *Plumularia* Mulder and Trebilcock, 1909: 31, pl. 1, figs 6, 9, 10.

*Syntype*: F57966 (1 microslide).

Victoria, Barwon Heads.

Remarks: *ex* Trebilcock Coll.

**carinata**, *Aglaophenia* Bale, 1894: 105, pl. 6, figs 1–3.

*Syntypes* (probable): F58750 (2 microslides);

F59337 (1 microslide).

Western Australia, Rottnest Island; A.H. Courderôt.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 297 and 298, as "co-types."

**carinifera**, *Aglaophenia* Bale, 1914b: 181, pl. 38, figs 1, 2.

*Syntypes* (probable): F58406 (6 microslides).

Great Australian Bight; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 278 and 279, as "co-types." Exact locality of these specimens unknown.

*Syntypes* (probable): F58407 (3 microslides).

Great Australian Bight; 80–120 fm [146–220 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).

*Syntype* (probable): F59345 (EtOH).

Great Australian Bight; 120 fm [220 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).

**chiltoni**, *Thecocarpus* Bale, 1924: 261, text fig. 16.

*Syntypes* (probable): F58221 (4 microslides).

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 305 and 306.

*Syntype* (probable): F60225 (1 microslide).

Remarks: *ex* Trebilcock Coll.

New Zealand, 10 miles [16 km] NW of Cape Maria van Diemen; 50 fm [92 m]; C. Chilton.

**ciliata**, *Nemertesia* Bale, 1914b: 170, pl. 36, fig. 1.

*Syntype* (probable): F58338 (1 microslide).

Tasmania, Oyster Bay; 60 fm [110 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll.

**compressa**, *Plumularia* Bale, 1882: 43, pl. 15, figs 5, 5a.

*Syntypes* (probable): F59055 (1 microslide);

F59056 (1 microslide);

F59057 (dry).

South Australia, ?Robe; T.B. Smeaton.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 203, as "co-type."

**cornuta**, *Plumularia* Bale, 1884: 132, pl. 11, figs 1, 2.

*Syntypes* (probable): F58830 (1 microslide);

F58831 (dry).

Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.

Remarks: *ex* Bale Coll.

*Syntype* (probable): F59060 (1 microslide).

Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.

Remarks: *ex* Bale Coll., *ex* Mapleston Coll. The slide is listed in Bale's Register, no. 208, as "co-type."

*Syntypes* (probable): F58832 (1 microslide);

F58833 (dry).

Queensland, Bowen [as "Pt. Denison"]; W.A. Haswell.

Remarks: *ex* Bale Coll.

*Syntypes* (probable): F58834 (2 microslides);

F58835 (dry).

Queensland, Holbourne Island [as "Holborn Id."]; 20 fm [37 m]; W.A. Haswell.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 207, as "co-type."

**corrugata**, *Plumularia setaceoides* Mulder and Trebilcock, 1911: 118, pl. 2, fig. 8.

*Syntypes*: F57972 (1 microslide); F57986 (1 microslide).

Victoria, Torquay.

Remarks: *ex* Trebilcock Coll. The epithet *corrugata* was raised to specific rank by Mulder and Trebilcock (1914b: 43). The name *P. corrugata* was subsequently found to be preoccupied,

and the taxon was given the new name *P. corrugatissima* (see Mulder and Trebilcock, 1915: 53).

**crateriformis, *Plumularia setaceoides*** Mulder and Trebilcock, 1911: 118, pl. 3, figs 8, 8a.

*Syntypes*: F57987 (1 microslide);

F57988 (1 microslide);

F57989 (1 microslide).

Victoria, Thompsons Creek [near Barwon Heads and Torquay] [as "Bream Creek"].

Remarks: *ex* Trebilcock Coll.

**crateroides, *Plumularia*** Mulder and Trebilcock, 1911: 123, pl. 3, figs 5, 5a.

*Syntype*: F57993 (1 microslide).

Victoria, Queenscliff.

Remarks: *ex* Trebilcock Coll.

**cruciata, *Nemertesia ciliata*** Bale, 1915: 300.

*Syntypes* (probable): F58332 (3 microslides).

Tasmania, off South Cape; 75 fm [137 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 154.

**cylindrica, *Antennularia*** Bale, 1884: 146, pl. 10, fig. 7.

*Holotype* (probable): F58836 (2 microslides).

Queensland, Port Curtis; 5–7 fm [9–13 m]; W.A. Haswell.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 152, as "co-type."

**cystifera, *Aglaophenia divaricata*** Bale, 1915: 314.

*Syntype* (probable): F58334 (1 microslide).

South Australia; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 261, as "co-type."

**dannevigi, *Aglaophenia*** Bale, 1914a: 41, pl. 3, fig. 4, pl. 6, fig. 4.

*Syntypes* (probable): F58663 (6 microslides);

F58664 (3 microslides);

F58665 (6 microslides).

Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Four slides are listed in Bale's Register, nos. 274, 275, 276 and 277, as "co-types." Another slide is listed in Trebilcock's Register, no. 167.

**decumbens, *Aglaophenia*** Bale, 1914a: 48, pl. 4, fig. 4, pl. 6, fig. 6.

*Syntypes* (probable): F58669 (1 microslide);

F58785 (1 microslide).

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 264, as "co-type."

*Syntype* (probable): F58670 (1 microslide).

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney). Bass Strait; 1909–1914; FIS *Endeavour*.

**delicatula, *Plumularia*** Busk, 1852: 396.

*Syntype* (possible): F57958 (1 microslide).

Torres Strait, Prince of Wales Channel; 9 fm [16 m]; 1846–1850; HMS *Rattlesnake*.

Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 290, as "co-type."

**delicatula, *Plumularia*** Bale, 1882: 40, pl. 15, figs 2, 2a.

*Syntype* (probable): F59050 (1 microslide).

Victoria, Griffiths Point; J.R.Y. Goldstein.

Remarks: *ex* Bale Coll. Bale (1926: 21) found the name *P. delicatula* preoccupied, and gave the taxon the new name *P. wilsoni*.

**dubia, *Plumularia campanulaformis*** Mulder and Trebilcock, 1911: 115, pl. 2, fig. 6.

*Syntype*: F57983 (1 microslide).

Victoria, Torquay.

Remarks: *ex* Trebilcock Coll.

**dubiaformis, *Plumularia*** Mulder and Trebilcock, 1911: 119, pl. 2, fig. 7.

*Syntypes* (probable).

Victoria; Queenscliff, Bream Creek and Torquay.

Remarks: type specimens not found (see Appendix 1).

**effusa, *Acanthella*** Allman, 1883: 27, pl. 6.

*Syntype* (possible): F60323 (1 microslide).

Torres Strait, Queensland, off Cape York; dredged; Aug–Sep 1874; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 142. Trebilcock reidentified and labelled the slide as *Plumularia scabra*. Considered a possible syntype by inference.

**effusa, *Plumularia*** Busk, 1852: 400.

*Syntype*: F59329 (1 microslide).

Torres Strait, Prince of Wales Channel; 1846–1850; HMS *Rattlesnake*.

Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 198, as "type."

**epibracteolosa, *Plumularia*** Watson, 1973: 189, text figs 56–60.

*Holotype*: F42046 (1 microslide), previous no. G2046;

F42101 (formalin), previous no. G2101.

*Paratypes*: F42047 (1 microslide), previous no. G2047;

F42048 (1 microslide), previous no. G2048;

F42049 (1 microslide), previous no. G2049;

F42050 (1 microslide), previous no. G2050;

F42051 (1 microslide), previous no. G2051;

F42052 (1 microslide), previous no. G2052.

South Australia, Pearson Island, rough watered side of island; on *Sargassum bracteolosum*; 45 m; SCUBA; 9 Jan 1969; S.A. Shepherd.

**everta, *Plumularia*** Mulder and Trebilcock, 1909: 31, pl. 1, fig. 5.

*Syntypes*: F57965 (2 microslides).

Victoria, Torquay.

Remarks: *ex* Trebilcock Coll.

**excavata, *Plumularia*** Mulder and Trebilcock, 1911: 116, pl. 2, figs 3, 3a.

*Syntypes*: F57985 (3 microslides).

Victoria, Spring Creek [near Torquay]; G.H. Roebuck.

Remarks: *ex* Trebilcock Coll.

**flabellum, *Plumularia*** Allman, 1883: 19, pl. 1, figs 1–4.

*Syntype* (possible): F60245 (1 microslide).

Indian Ocean, off Marion Island; 50–75 fm [92–137 m]; dredged; 26 Dec 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. Trebilcock reclassified and labelled the slide as *P. insignis flabellum*. Considered a possible syntype by inference.

**flexuosa, *Plumularia*** Bale, 1894: 115, pl. 5, figs 6–10.

*Syntypes* (probable): F58754 (1 microslide);

F58755 (3 microslides).

Victoria, mouth of Snowy River; P.H. MacGillivray.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 205 and 206, as "co-types."

**furcata, *Halicornaria*** Bale, 1884: 178, pl. 13, fig. 3, pl. 16, fig. 5.

*Syntypes* (probable): F58839 (2 microslides);

F58841 (dry).

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 245, as "co-type."

*Syntype* (possible): F58840 (1 microslide).

Remarks: *ex* Bale Coll., *ex* Maplestone Coll.

*Syntype* (possible): F59059 (1 microslide).

Remarks: *ex* Trebilcock Coll.



- New South Wales, off Port Stephens, Broughton Islands; 25 fm [46 m]; W.A. Haswell.
- geelongensis, *Plumularia campanula*** Mulder and Trebilcock, 1916: 76, pl. 11, figs 2, 2a–c.  
*Syntype* (probable).  
 Victoria, Corio Bay.  
 Remarks: type specimen not found (see Appendix 1).
- goldsteini, *Plumularia*** Bale, 1882: 41, pl. 15, figs 7, 7a.  
*Syntype* (probable): F59051 (1 microslide).  
 Victoria, Queenscliff; W.M. Bale.  
 Remarks: *ex* Bale Coll.
- gracilis, *Plumularia*** Lendenfeld, 1884c: 476, pl. 14, fig. 17, pl. 17, figs 28, 29.  
*Syntype*: F59276 (1 microslide).  
 Torres Strait; dredged; W. Macleay.  
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 189) as "from Lendenfeld's type," and labelled as *P. ram-sayi*.
- haswellii, *Halicornaria*** Bale, 1884: 180, pl. 13, fig. 5, pl. 16, fig. 8.  
*Holotype* (probable): F58842 (1 microslide);  
 F58843 (1 microslide);  
 F58844 (dry).  
 Queensland, Port Curtis; 5 fm [9 m]; W.A. Haswell.  
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 241, as "co-type."
- heterocarpa, *Aglaophenia*** Bale, 1882: 31.  
*Holotype* (probable): F59334 (1 microslide).  
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 317) as "co-type," and labelled as *A. brevirostris*.  
*Holotype* (probable): F58900 (1 microslide).  
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll.  
 Pacific Ocean, Fiji; J.R.Y. Goldstein.
- heterogona, *Thecocalus*** Bale, 1924: 255, text fig. 13.  
*Syntypes* (probable): F58220 (5 microslides).  
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 172 and 173, as "co-types."  
*Syntype* (probable): F59335 (1 microslide).  
 Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 278, as "part of type."  
 New Zealand, 10 miles [16 km] NW of Cape Maria van Diemen; 50 fm [92 m]; C. Chilton.
- humilis, *Halicornaria*** Bale, 1884: 182, pl. 13, fig. 8, pl. 16, fig. 6.  
*Syntypes* (probable): F58845 (2 microslides).  
 Victoria, Queenscliff.  
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 217, as "co-type."  
*Syntype* (probable): F58846 (1 microslide).  
 Victoria, Queenscliff; on *H. ascidioides*.  
 Remarks: *ex* Bale Coll.
- huxleyi, *Plumularia*** Busk, 1852: 395.  
*Syntype* (possible): F57957 (1 microslide).  
 Queensland, off Cumberland Islands; fine grey mud; 27 fm [49 m]; 1846–1850; HMS *Rattlesnake*.  
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 303. Considered a possible syntype by inference.
- hyalina, *Plumularia*** Bale, 1882: 41, pl. 15, fig. 9.  
*Syntype* (probable): F59052 (1 microslide).  
 Victoria, Queenscliff; W.M. Bale.  
 Remarks: *ex* Bale Coll.
- ilicistoma, *Aglaophenia*** Bale, 1882: 33, pl. 14, figs 4, 4a, b.  
*Syntypes* (probable): F59030 (1 microslide);  
 F59031 (1 microslide);  
 F59032 (1 microslide);  
 F59399 (1 microslide);  
 F59033 (dry).  
 Remarks: *ex* Bale Coll. Three slides are listed in Bale's Register, nos. 227, 228 and 229, as "co-types." The four slides are labelled *Halicornaria ilicistoma*.  
*Syntype* (probable): F59066 (1 microslide).  
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll.  
 Victoria, Queenscliff; W.M. Bale.
- inarmatus, *Thecocarpus formosus*** Trebilcock, 1928: 26, pl. 5, figs 6, 6a.  
*Syntypes* (probable).  
 New Zealand, Island Bay.  
 Remarks: type specimens not found (see Appendix 1).
- indivisa, *Plumularia*** Bale, 1882: 39, pl. 15, figs 1, 1a, b.  
*Syntype* (probable).  
 Victoria, Port Phillip Bay, Williamstown.  
 Remarks: type specimen not found (see Appendix 1).
- indivisa, *Sciurella*** Allman, 1883: 26, pl. 5.  
*Syntype*: F59308 (1 microslide).  
 Remarks: *ex* Bale Coll., *ex* BMNH. The slide is listed in Bale's Register, no. 153, as "from *Challenger* type."  
*Syntype* (possible): F60322 (1 microslide).  
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 142. Trebilcock reclassified and labelled the slide as *Nemertesia indivisa*.  
 Torres Strait, Queensland, Cape York, off Somerset Island; 5–10 fm [9–18 m]; dredged; Aug–Sep 1874; HMS *Challenger*.
- insignis, *Plumularia*** Allman, 1883: 21, pl. 2.  
*Holotype* (possible): F60246 (1 microslide).  
 Indian Ocean, off Marion Island; 46°41'S, 38°10'E; volcanic sand; 310 fm [567 m]; dredged; 27 Dec 1873; HMS *Challenger*; Stn 145A.  
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered a possible holotype by inference.
- intermedia, *Halicornaria*** Bale, 1914a: 53, pl. 5, fig. 2, pl. 7, figs 3, 4.  
*Syntypes* (probable): F58674 (3 microslides);  
 F58676 (1 microslide);  
 F58675 (2 microslides).  
 Tasmania, Oyster Bay; 20 fm [37 m]; 1909–1914; FIS *Endeavour*.  
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 246 and 247. In a tipped-in preface, Bale (1914a) found the name *H. intermedia* preoccupied, and gave the taxon the new name *H. furcata* var. *intermedia*.
- laxa, *Aglaophenia*** Allman, 1876: 275, pl. 21, figs 5–7.  
*Holotype* (probable): F59306 (1 microslide).  
 Remarks: *ex* Bale Coll., *ex* BMNH 99.7.1.6197. The slide is listed in Bale's Register, no. 267, as "schizotype."  
*Paratypes*: F59307 (3 microslides).  
 Remarks: *ex* Bale Coll., *ex* BMNH. One slide is listed in Bale's Register, no. 268, as "from paratype."  
 New Zealand; "growing over the surface of a littoral fucus."
- longicornis, *Plumularia*** Busk, 1852: 399.  
*Syntype* (possible): F57960 (1 microslide).  
 Torres Strait, Prince of Wales Channel; 9 fm [16 m]; 1846–1850; HMS *Rattlesnake*.  
 Remarks: *ex* Bale Coll., *ex* BMNH. Considered a possible syntype by inference.
- lucerna, *Plumularia*** Mulder and Trebilcock, 1911: 122, pl. 3, fig. 4.  
*Syntype*: F57992 (1 microslide).  
 Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].  
 Remarks: *ex* Trebilcock Coll.

**macrocarpa**, *Aglaophenia* Bale, 1888: 791, pl. 21, figs 3, 4.

Syntypes (probable): F58778 (2 microslides).

New South Wales, off Port Jackson.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 286, as "co-type."

**mccoyi**, *Aglaophenia* Bale, 1882: 36, pl. 14, figs 2, 2a–c.

Syntypes (probable): F59040 (2 microslides);

F59041 (1 microslide).

Victoria, Queenscliff; W.M. Bale.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 262 and 263, as "co-types." Under provisions of the ICZN (1985), the specific name should be emended to *maccoyi*.

**megalocarpa**, *Aglaophenia* Bale, 1914b: 45, pl. 4, fig. 1, pl. 6, fig. 5.

Syntypes (probable): F58666 (4 microslides);

F58667 (2 microslides);

F58668 (1 microslide).

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 311 and 312, as "co-types."

Syntype (probable): F60339 (1 microslide).

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney). Great Australian Bight; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.

**meretricia**, *Plumularia* Watson, 1973: 191, text figs 61–64.

Holotype: F42053 (1 microslide), previous no. G2053;

F42102 (formalin), previous no. G2102.

Paratypes: F42055 (1 microslide), previous no. G2055;

F42056 (1 microslide), previous no. G2056;

F42057 (1 microslide), previous no. G2057;

F42058 (1 microslide), previous no. G2058;

F42103 (formalin), previous no. G2103.

South Australia, Pearson Island, rough watered side of island; on sponge on vertical walls; 27–33 m; SCUBA; 7 Jan 1969; J.E. Watson.

Paratype: F42054 (1 microslide), previous no. G2054.

South Australia, Pearson Island, sheltered side of island; on sponge on vertical walls; 18 m; SCUBA; 8 Jan 1969; J.E. Watson.

Paratypes: F42059 (1 microslide), previous no. G2059;

F42104 (formalin), previous no. G2104.

South Australia, Pearson Island, rough watered side of island; on sponge; 27–30 m; SCUBA; 7 Jan 1969; J.E. Watson.

**microscopica**, *Plumularia* Mulder and Trebilcock, 1909: 30, pl. 1, fig. 4.

Holotype: F57964 (1 microslide).

Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"]; on *Sertularella divaricata*; G.C. Bartlett.

Remarks: *ex* Trebilcock Coll.

**minutus**, *Thecocalus* Trebilcock, 1928: 25, pl. 7, figs 6, 6a.

Syntypes (possible): F57899 (2 microslides).

New Zealand, Dunedin, St Clair; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. Considered possible syntypes by inference.

**mirabilis**, *Diplocheilus* Allman, 1883: 49, pl. 8, figs 4–7.

Holotype: F59309 (1 microslide).

Bass Strait, Tasmania, off Moncoeur Island; sand; 38–40 fm [70–73 m]; dredged; 2 Apr 1874; HMS *Challenger*; Stn 162.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 228, as "type." Trebilcock reclassified and labelled the slide as *Kirchenpaueria mirabilis*.

**mulderi**, *Aglaophenia* Bartlett, 1907b: 66, unnumbered pl. fig.

Holotype: F57886 (1 microslide), previous no. 62765.

Victoria, Thompsons Creek [near Queenscliff] [as "Bream Creek"].

**multiseptata**, *Cladocarpella* Bale, 1915: 304, pl. 47, figs 1–5.

Syntype (probable): F58333 (1 microslide).

Queensland, off Port Curtis, Capricorn Group, 38 miles [61 km] NE of North Reef; 74 fm [135 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll.

**obesa**, *Plumularia* Blackburn, 1938: 315, text fig. 1.

Holotype: F57876 (1 microslide), previous no. 70661.

South Australia, Spencer Gulf, Reevesby Island; on *Posidonia*; 4–5 fm [7–9 m]; Dec 1936; McCoy Society for Field Investigation and Research Expedition.

**opima**, *Plumularia setacea* Bale, 1924: 254, text fig. 11c.

Syntype (probable): F60243 (1 microslide).

New Zealand, Dunedin, Tomahawk Beach; 14 Sep 1911; C.B. Morris.

Remarks: *ex* Bale Coll.

**opposita**, *Plumularia* Mulder and Trebilcock, 1911: 120, pl. 2, fig. 5.

Syntype: F57990 (1 microslide).

Victoria, Torquay.

Remarks: *ex* Trebilcock Coll.

**parvula**, *Aglaophenia* Bale, 1882: 35, pl. 14, figs 3, 3a, b.

Syntypes (probable): F53249 (1 microslide);

F53313 (1 microslide);

F59037 (1 microslide);

F59038 (1 microslide);

F59039 (dry).

Victoria, Queenscliff; W.M. Bale, J.R.Y. Goldstein.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 291 and 292, as "co-types."

**phoenicea**, *Plumularia* Busk, 1852: 398.

Syntype (possible): F57959 (1 microslide).

Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 251, and labelled "from Mr Busk."

Syntypes (possible): F59328 (2 microslides).

Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The two slides are labelled as *Lytocarpus phoeniceus*.

Torres Strait, Prince of Wales Channel; 9 fm [16 m]; 1846–1850; HMS *Rattlesnake*.

**phyllocarpa**, *Aglaophenia* Bale, 1888: 793, pl. 21, figs 9, 10.

Holotype (probable): F58779 (2 microslides).

Queensland, Bowen [as "Port Denison"].

Remarks: *ex* Bale Coll.

**pluma**, *Heteroplton* Allman, 1883: 32, pl. 8, figs 1, 3.

Holotype (possible): F60324 (1 microslide).

Bass Strait, Tasmania, off East Moncoeur Island; 39°10.5'S, 146°37.0'E; sand and shells; 38–40 fm [70–73 m]; dredged; 2 Apr 1874; HMS *Challenger*; Stn 162.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 150. Trebilcock reidentified and labelled the slide as *Plumularia glutinosa*. Considered possibly part of the holotype by inference.

**plumosa**, *Aglaophenia* Bale, 1882: 37, pl. 14, figs 6, 6a, b.

Syntypes (probable): F59042 (1 microslide);

F59043 (1 microslide);

F59044 (1 microslide);

F59045 (2 microslides);

F59046 (dry).

Victoria, Queenscliff; W.M. Bale.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 271 and 272, as "co-types."

**procumbens**, *Plumularia* Spencer, 1891: 130, pls 21–23.

Syntype (possible): F58410 (EtOH).

Remarks: *ex* University of Melbourne, Department of Zoology (MUZD 413). Considered a possible syntype by inference.

Syntypes (possible): F58411 (1 microslide);

F58412 (2 microslides).

Remarks: *ex* Bale Coll. The slides are labelled "JBW 771,"



probably referring to a systematic listing. One slide is listed in Bale's Register, no. 190, as the "same material as Spencer's." Considered possible syntypes by inference.  
*Syntype* (possible): F58413 (1 microslide).  
 Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock's Register, no. 302, as a "specimen received from Bale." Considered a possible syntype by inference.  
 Victoria, Port Phillip Bay; J.B. Wilson.

***producta, Plumularia* Bale, 1882: 39, pl. 15, fig. 3.**

*Syntype* (probable): F59047 (1 microslide).  
 Victoria, Queenscliff; W.M. Bale.  
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 159) as "co-type," and labelled as *Kirchenpaueria producta*.

***prolifera, Aglaophenia* Bale, 1882: 34, pl. 14, figs 5, 5a.**

*Syntypes* (probable): F59034 (2 microslides);  
 F59035 (1 microslide);  
 F59036 (dry).  
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 230, as "type." The slides are labelled *Halicornaria prolifera*.  
*Syntype* (probable): F59064 (1 microslide).  
 Remarks: *ex* Bale Coll., *ex* Maplestone Coll.  
 Victoria, Queenscliff; W.M. Bale.

***pulchella, Plumularia* Bale, 1882: 42, pl. 15, figs 6, 6a.**

*Syntype* (probable): F59054 (1 microslide).  
 Victoria, Queenscliff; W.M. Bale.  
 Remarks: *ex* Bale Coll.

***racemiferus, Lytocarpus* Allman, 1883: 41, pl. 13.**

*Syntypes*: F58201 (2 microslides).  
 Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; FIS *Challenger*.  
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 147 and 147a, as "from type."

***ramosa, Plumularia* Busk, 1852: 398.**

*Syntype*: F59327 (1 microslide).  
 Tasmania, Banks Strait, Swan Island; "thrown on the beach"; 1846–1850; HMS *Rattlesnake*.  
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH 99.7.1.6241. The slide is labelled "schizotype."

***ramsayi, Plumularia* Bale, 1884: 131, pl. 11, figs 3, 4.**

*Syntypes* (probable): F58826 (1 microslide);  
 F58827 (dry).  
 Queensland, Bowen [as "Port Denison"]; 5 fm [9 m]; W.A. Haswell.  
 Remarks: *ex* Bale Coll.  
*Syntype* (probable): F58828 (1 microslide).  
 Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.  
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 188, as "co-type."  
*Syntype* (probable): F59062 (1 microslide).  
 Queensland, Port Molle; 15 fm [27 m]; W.A. Haswell.  
 Remarks: *ex* Trebilcock Coll., *ex* Maplestone Coll. The slide is listed in Trebilcock's Register, no. 177.  
*Syntype* (probable): F58829 (1 microslide).  
 Queensland, Albany Passage; 9 fm [16 m]; W.A. Haswell.  
 Remarks: *ex* Bale Coll.

***rostrata, Halicornaria* Bale, 1924: 264, text fig. 18.**

*Syntypes* (probable): F58222 (4 microslides).  
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 218 and 219, as "co-types."  
*Syntype* (probable): F60226 (1 microslide).  
 Remarks: *ex* Trebilcock Coll.  
 New Zealand, 10 miles [16 km] NW of Cape Maria van Diemen; 50 fm [92 m]; C. Chilton.

***rotunda, Plumularia delicatula* Mulder and Trebilcock, 1911:**

116, pl. 2, fig. 2.

*Syntype*: F57984 (1 microslide).

Victoria, Thompsons Creek [near Torquay] [as "Bream Creek"].

Remarks: *ex* Trebilcock Coll.

***rubens, Aglaophenia* Kirchenpauer, 1872: 48, pl. 8, fig. 30.**

*Syntype* (possible): F58238 (dry).  
 Queensland, Bowen [as "Port Denison (Queensland, Australien)"].  
 Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible syntype by inference.

***rubra, Plumularia* Lendenfeld, 1884c: 476, pl. 13, figs 11, 12, pl. 14, fig. 15.**

*Syntype*: F59296 (1 microslide).  
 New South Wales, Port Jackson; "from sea-weeds of the Laminarian Zone"; R. von Lendenfeld.  
 Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 166) as "from Lendenfeld's type," and labelled as *P. campanula*.

***scandens, Halicornaria urceolifera* Bale, 1914a: 51, pl. 5, fig. 4, pl. 7, fig. 5.**

*Syntypes* (probable): F58673 (5 microslides).  
 Great Australian Bight; on *Aglaophenia megalocarpa* and *A. billardi*; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.  
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 225 and 226, as "co-types."

***setaceaformis, Plumularia* Mulder and Trebilcock, 1915: 52, pl. 9, figs 2, 2a, b.**

*Syntype*: F57994 (1 microslide).  
 "off Barren Island" [?Cape Barren Island, Tasmania]; on *P. buski*; 40 fm [73 m].  
 Remarks: *ex* Trebilcock Coll.

***setaceoides, Plumularia* Bale, 1882: 40, pl. 15, figs 4, 4a, b.**

*Syntypes* (probable): F59048 (2 microslides);  
 F59049 (dry).  
 Victoria, Port Phillip Bay, Williamstown; W.M. Bale.  
 Remarks: *ex* Bale Coll.

***sinuosa, Aglaophenia* Bale, 1888: 790, pl. 21, figs 1, 2.**

*Syntypes* (probable): F58777 (2 microslides).  
 Queensland, Bowen [as "Port Denison"].  
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 300, as "co-type."

***spectabilis, Lytocarpus* Allman, 1883: 43, pl. 15.**

*Syntypes* (possible): F60326 (3 microslides).  
 Torres Strait, Flinders Passage; 10°30'S, 142°18'E; coral sand; 8 fm [15 m]; dredged; 8 Sep 1874; HMS *Challenger*; Stn 186.  
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 17, 17a, b. Trebilcock reidentified and labelled the slide as *L. phoeniceus*. Considered possible syntypes by inference.

***spinulosa, Plumularia* Bale, 1882: 42, pl. 15, figs 8, 8a.**

*Syntype* (probable): F59053 (1 microslide).  
 Victoria, Queenscliff; W.M. Bale.  
 Remarks: *ex* Bale Coll.

***squarrosa, Aglaophenia* Kirchenpauer, 1872: 47, pl. 8, fig. 29.**

*Syntype* (possible): F58237 (dry).  
 Queensland, Bowen [as "Port Denison (Queensland, Australien)"].  
 Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible syntype by inference.

***superba, Aglaophenia* Bale, 1882: 31, pl. 13, figs 4, 4a, b.**

*Syntypes* (probable): F58898 (1 microslide);  
 F58899 (1 microslide).  
 Victoria, Griffiths Point; J.R.Y. Goldstein.  
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register,

no. 237, as "co-type." The slides are labelled as *Halicornaria superba*.

**tasmanica**, *Aglaophenia* Bale, 1914a: 37, pl. 3, fig. 2, pl. 6, fig. 2.

Syntypes (probable): F58660 (13 microslides); F58662 (1 microslide).

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 280 and 281, as "co-types."

Syntypes (probable): F58661 (3 microslides).

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney). Tasmania, Oyster Bay; 20 fm [37 m]; 1909–1914; FIS *Endeavour*.

**tenuissima**, *Aglaophenia* Bale, 1914b: 179, pl. 37, figs 1, 2.

Syntypes (probable): F58403 (10 microslides).

Great Australian Bight; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 313 and 314, as "co-types." Exact locality of these specimens unknown.

Syntypes (probable): F58404 (2 microslides).

Great Australian Bight; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney). Exact locality of these specimens unknown.

**thompsoni**, *Aglaophenia* Bale, 1882: 33, pl. 14, figs 1, 1a.

Syntype (probable): F59333 (1 microslide).

Victoria, Griffiths Point; J.R.Y. Goldstein.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 214) as "co-type," and labelled as *Halicornaria longirostris*.

**togata**, *Plumularia* Watson, 1973: 191, text figs 65–67.

Holotype: F42060 (1 microslide), previous no. G2060.

South Australia, Pearson Island; rough watered side of island; on *Metagoniolithon charoides*; 33 m; SCUBA; 8 Jan 1969; S.A. Shepherd.

Paratypes: F42061 (1 microslide), previous no. G2061;

F42062 (1 microslide), previous no. G2062;

F42063 (1 microslide), previous no. G2063;

F42064 (1 microslide), previous no. G2064;

F42065 (1 microslide), previous no. G2065;

F42066 (1 microslide), previous no. G2066;

F42105 (formalin), previous no. G2105.

South Australia, Pearson Island; sheltered side of island; on *Metagoniolithon charoides*; 30 m; SCUBA; 8 Jan 1969; S.A. Shepherd.

**torresia**, *Plumularia* Lendenfeld, 1884c: 477, pl. 13, figs 13, 14, pl. 14, fig. 16.

Syntype: F59277 (1 microslide).

Torres Strait; dredged; W. Macleay.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 165) as "from Lendenfeld's type," and labelled as *P. campanula*.

**trebilcocki**, *Gattya* Watson, 1973: 186, text figs 48–52.

Holotype: F42029 (1 microslide), previous no. G2029;

F42099 (formalin), previous no. G2099.

Paratypes: F42030 (1 microslide), previous no. G2030;

F42032 (1 microslide), previous no. G2032;

F42034 (1 microslide), previous no. G2034;

F42035 (1 microslide), previous no. G2035.

South Australia, Pearson Island; rough watered side of island; on *Caulerpa brownii*; 33 m; SCUBA; 10 Jan 1969; S.A. Shepherd.

Paratypes: F42031 (1 microslide), previous no. G2031;

F42033 (1 microslide), previous no. G2033;

F42100 (formalin), previous no. G2100.

South Australia, Pearson Island, rough watered side of island; on sponge on algae; 13 m; SCUBA; 10 Jan 1969; S.A. Shepherd.

**tripartita**, *Plumularia* Lendenfeld, 1884c: 477, pl. 12, figs 8–10.

Syntype: F59278 (1 microslide).

New Zealand, Timaru; R. von Lendenfeld.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register (no. 179) as "from Lendenfeld's type," and labelled as *P. setacea*.

**tubulifera**, *Halicornaria* Bale, 1914b: 187, pl. 36, fig. 3.

Syntypes (probable): F58408 (5 microslides).

Great Australian Bight; 130°40'E; 160 fm [293 m]; 1909–1914; FIS *Endeavour*.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 210 and 211, as "co-types." Another slide is listed in Trebilcock's Register, no. 170.

**tubulosa**, *Plumularia* Bale, 1894: 114, pl. 5, figs 2–5.

Syntypes (probable): F58752 (1 microslide);

F58753 (2 microslides).

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 178, as "co-type." The slides are labelled "JBW 755," probably referring to a systematic listing.

Syntype (probable): F58751 (1 microslide).

Remarks: *ex* Bale Coll. The slide is labelled "JBW 778a," probably referring to a systematic listing.

Victoria, Port Phillip Bay; J.B. Wilson.

**turgida**, *Plumularia* Bale, 1888: 779, pl. 20, figs 12, 13.

Syntype (probable): F58770 (1 microslide).

Remarks: *ex* Bale Coll.

Syntype (probable): F58771 (1 microslide).

Remarks: *ex* Trebilcock Coll.

New Zealand, Lyttelton; R. von Lendenfeld.

**wattsii**, *Plumularia* Bale, 1887: 95.

Syntypes (probable): F59338 (1 microslide);

F58739 (2 microslides).

Victoria, Port Phillip Bay, South Channel; H. Watts.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 181, as "co-type."

Syntype (possible): F58746 (1 microslide).

Victoria, Port Phillip Bay; H. Watts.

Remarks: *ex* Watts Coll. Considered a possible syntype by inference.

**whiteleggei**, *Aglaophenia* Bale, 1888: 794, pl. 21, fig. 8.

Holotype (probable): F58780 (1 microslide).

Unknown locality.

Remarks: *ex* Bale Coll.

**zygocladia**, *Plumularia* Bale, 1914b: 171, pl. 36, fig. 2.

Syntypes (probable): F58339 (3 microslides).

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 169, as "co-type."

Syntype (probable): F59336 (1 microslide).

Remarks: *ex* Trebilcock Coll., *ex* Australian Museum (Sydney).

The slide is listed in Trebilcock's Register, no. 296, as "type." Queensland, off Port Curtis, Capricorn Group, 38 miles [61 km] NE of North Reef Lighthouse; 74 fm [135 m]; 1909–1914; FIS *Endeavour*.

## SERTULARIIDAE

**acanthostoma**, *Sertularia* Bale, 1882: 23, pl. 12, fig. 4.

Syntype (probable).

?South Australia, Robe; T.B. Smeaton.

Remarks: type specimen not found (see Appendix 1).

**adcocki**, *Sertularia* Bartlett, 1907b: 63, unnumbered pl. fig.

Syntype: F57882 (1 microslide), previous no. 62760.

Victoria, Thompsons Creek [near Queensciff] [as "Bream Creek"]; G.C. Bartlett.

**angulosa**, *Sertularella* Bale, 1894: 102, pl. 4, fig. 6.

Syntype (probable): F58749 (1 microslide).

Unknown locality.



- Remarks: *ex* Bale Coll.
- annulata*, *Sertularia*** Allman, 1888: 52, pl. 24, figs 2, 2a.  
*Syntype* (possible): F60331 (1 microslide).  
 New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E; hard ground; 35 fm [64 m]; dredged; 3 Jun 1874; HMS *Challenger*; Stn 163B.  
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 219. Trebilcock reidentified and labelled the slide as *Sertularella gayi*. Considered a possible by inference.
- annulaventricosa*, *Sertularella*** Mulder and Trebilcock, 1915: 54, pl. 7, fig. 1, pl. 8, figs 4, 4a.  
*Syntypes*: F57995 (2 microslides).  
 Victoria, Queenscliff; Jan 1914.  
 Remarks: *ex* Trebilcock Coll.
- australis*, *Dynamena*** Kirchenpauer, 1864: 11, pl. fig. 5.  
*Syntype* (possible): F58233 (dry).  
 Australia, Port Phillip Bay [as "Port Phillip (Australien)"]; on *Sargassum* sp.; F. von Mueller.  
 Remarks: *ex* Herbarium O.W. Sonder Coll. Considered a possible syntype by inference.
- avia*, *Amphisbetia*** Watson, 1975: 169, text figs 26, 27.  
*Holotype*: F42499 (1 microslide), previous no. G2499; F42500 (formalin), previous no. G2500.  
*Paratype*: F42501 (1 microslide), previous no. G2501.  
 Tasmania, Bruny Island, Adventure Bay; on *Carpoglossum confluens*; 3 m; SCUBA; 16 Feb 1972; J.E. Watson.  
*Paratype*: F42502 (1 microslide), previous no. G2502.  
 Tasmania, Satellite Island [E coast of Bruny Island]; on *Carpoglossum confluens*; 3 m; SCUBA; 17 Feb 1972; J.E. Watson.
- avriia*, *Sertularella*** Watson, 1973: 172, text figs 24, 25.  
*Holotype*: F41964 (1 microslide), previous no. G1964; F42094 (formalin), previous no. G2094.  
*Paratypes*: F41965 (1 microslide), previous no. G1965; F41966 (1 microslide), previous no. G1966; F41967 (1 microslide), previous no. G1967.  
 South Australia, Pearson Island, sheltered side of island; on *Sargassum verruculosum*; 13 m; SCUBA; 8 Jan 1969; S.A. Shepherd.
- bicornis*, *Sertularia*** Bale, 1882: 22, pl. 12, fig. 3.  
*Syntypes* (probable): F58980 (2 microslides); F58886 (1 microslide).  
 Victoria, Queenscliff; W.M. Bale.  
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 114, as "co-type."
- bidens*, *Sertularia*** Bale, 1884: 70, pl. 6, fig. 6, pl. 19, fig. 1.  
*Syntypes* (probable): F58799 (1 microslide); F58800 (1 microslide); F58801 (1 microslide).  
 Victoria, Queenscliff.  
 Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 136, as "co-type."
- cerastium*, *Thuiaria*** Allman, 1876: 271, pl. 18, figs 3, 4.  
*Holotype*: F59303 (1 microslide).  
 New Zealand, North Island [as "Northern Island"]; A. Sinclair.  
 Remarks: *ex* Bale Coll., *ex* BMNH.
- crassiuscula*, *Sertularella*** Bale, 1924: 240, text fig. 8.  
*Syntype* (probable): F58223 (1 microslide).  
 New Zealand, Akaroa; C. Chilton.  
 Remarks: *ex* Bale Coll.  
*Syntype* (probable): F58786 (1 microslide).  
 New Zealand.  
 Remarks: *ex* Bale Coll., *ex* Hincks Coll., BMNH.
- crenata*, *Sertularia*** Bale, 1884: 86, pl. 4, fig. 2.  
*Holotype* (probable): F58812 (1 microslide).
- Victoria, Port Phillip Bay, Schnapper Point; J.F. Bailey.  
 Remarks: *ex* Bale Coll.
- cylindrica*, *Sertularella*** Bale, 1888: 765, pl. 16, fig. 7.  
*Holotype* (probable).  
 New South Wales, Port Jackson; on *S. divaricata subdichotoma*.  
 Remarks: type specimen not found (see Appendix 1).
- cylindritheca*, *Sertularia*** Allman, 1888: 59, pl. 29, figs 1, 1a.  
*Holotype* (possible): F60334 (1 microslide).  
 Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.  
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 216. Trebilcock reclassified and labelled the slide as *Sertularella cylindritheca*. Considered possibly part of the holotype by inference.
- dichotomum*, *Dictyocladium*** Allman, 1888: 77, pl. 36, figs 2, 2a.  
*Syntypes*: F59322 (2 microslides).  
 Remarks: *ex* Bale Coll., *ex* BMNH. One slide is listed in Bale's Register, no. 98, as "from type."  
*Syntypes*: F58213 (2 microslides).  
 Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, no. 205 and 205a, as "from type." Trebilcock reclassified and labelled the slides as *Selaginopsis dichotoma*.  
 Bass Strait, Tasmania, off East Moncoeur Island; 39°10.5'S, 146°37.0'E; sand and shells; 38 fm [70 m]; dredged; 2 Apr 1874; HMS *Challenger*; Stn 162.
- distans*, *Hypopyxis*** Bale, 1914b: 167, pl. 35, figs 2–5.  
*Syntype* (probable): F58336 (6 microslides).  
 Great Australian Bight; 126°45.25'E, 190–320 fm [348–586 m]; or, 130°40'E, 160 fm [293 m]; FIS *Endeavour*.  
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 77 and 78, as "co types." Exact locality of these specimens unknown.
- divaricata*, *Sertularia*** Busk, 1852: 388.  
*Syntype*: F59325 (1 microslide).  
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH 99.7.1.6205.  
 The slide is labelled "schizotype."  
*Syntype* (possible): F59326 (1 microslide).  
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. Considered a possible syntype by inference.  
 Bass Strait; on dead shells; 45 fm [82 m]; 1846–1850; HMS *Rattlesnake*.
- divergens*, *Sertularia*** Busk, 1852: 392.  
*Syntype*: F57955 (1 microslide).  
 Tasmania, Banks Strait, Swan Island; on algae; 1846–1850; HMS *Rattlesnake*.  
 Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 121, as "Busk's type."
- dolichocarpa*, *Thuiaria*** Allman, 1876: 270, pl. 19, figs 3, 4, 4a.  
*Holotype*: F59302 (1 microslide).  
 New Zealand, North Island [as "Northern Island"]; A. Sinclair.  
 Remarks: *ex* Bale Coll. *ex* BMNH.
- dubia*, *Sertularella divaricata*** Bale, 1888: 761, pl. 16, figs 1, 2.  
*Syntype* (probable): F58763 (1 microslide).  
 New South Wales, Bondi Bay.  
 Remarks: *ex* Bale Coll.
- edentula*, *Sertularella*** Bale, 1924: 237, text fig. 6.  
*Holotype*: F58218 (5 microslides).  
 New Zealand, 10 miles [16 km] NW of Cape Maria van Diemen; 50 fm [92 m]; C. Chilton.  
 Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 75 and 76, as "co-types."
- epizoicus*, *Symplectoscyphus*** Watson, 1973: 177, text figs 31–33.  
*Holotype*: F41985 (1 microslide), previous no. G1985;

F42096 (formalin), previous no. G2096.

South Australia, Pearson Island, sheltered side of island; on *Thecocarpus divaricatus cystifera*; 18–27 m; SCUBA; 8 Jan 1969; J.E. Watson; Stn B.

Paratypes: F41986 (1 microslide), previous no. G1986;

F41987 (1 microslide), previous no. G1987;

F41988 (1 microslide), previous no. G1988.

South Australia, Pearson Island, rough watered side of island; on *Thecocarpus divaricatus cystifera*; 30 m; SCUBA; 7 Jan 1969; J.E. Watson; Stn A.

*exigua*, *Sertularia* Allman, 1888: 55, pl. 26, figs 2, 2a.

Syntype (possible): F60333 (1 microslide).

Atlantic Ocean, near the Azores; 38°38.0'N, 28°28.5'W; volcanic mud; 450 fm [824 m]; dredged; 2 Jul 1873; HMS *Challenger*; Stn 75.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 218. The plate figures were labelled as *S. laxa*, apparently an earlier manuscript name. Trebilcock reidentified and labelled the slide as *Sertularella gaudichaudi*. Considered a possible syntype by inference.

*farquhari*, *Thuiaria* Bale, 1924: 244, text fig. 10.

Syntypes: F58219 (2 microslides)

New Zealand, Lyttelton; 26 Apr 1903; C. Chilton.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 85, as "co-type."

*fasciculata*, *Dynamena* Kirchenpauer, 1864: 12, pl. fig. 7.

Syntypes (possible): F58227 (dry); F58228 (dry);

F58229 (dry); F58230 (dry).

New Zealand [as "Neuseeland"]; B.E. Frieberg.

Remarks: *ex* Herbarium O.W. Sonder Coll. Considered possible syntypes by inference.

*fenestrata*, *Thuiaria* Bale, 1884: 116, pl. 7, fig. 7, pl. 9, fig. 14.

Syntypes (probable): F58817 (2 microslides).

Queensland, Albany Passage [?off Cape York, near Albany Island]; 9 fm [16 m]; W.A. Haswell.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 79, as "co-type."

Syntype (probable): F58818 (1 microslide).

Queensland, Port Curtis [near Gladstone]; 5–7 fm [9–13 m]; W.A. Haswell.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 80, as "co-type."

*fertilis*, *Sertularia* Lendenfeld, 1884b: 406, pl. 7, figs 4, 5.

Syntype: F59299 (1 microslide).

New Zealand, Timaru; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

*flabellum*, *Thecocladium* Allman, 1888: 81, pl. 38, figs 1–4.

Syntypes (possible): F60338 (2 microslides).

South Africa, Cape of Good Hope, Simons Bay; 10–20 fm [18–37 m]; Oct–Dec 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 148 and 148a. Trebilcock reclassified and labelled the slides as *Sertularella flabellum*. Considered possible syntypes by inference.

*flucticulata*, *Sertularella robusta* Trebilcock, 1928: 18, pl. 6, figs 5, 5a.

Syntype (possible): F57896 (1 microslide).

New Zealand, Bluff; 5 May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.

*fusca*, *Sertularella* Trebilcock, 1928: 13, pl. 5, figs 2, 2a, b.

Syntype (possible): F57895 (1 microslide).

New Zealand, Dunedin, St Clair, below the swimming pool; on algae in rockpools; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.

*fusiformis*, *Sertularia* Hutton, 1873: 257.

Syntypes: F59287 (2 microslides).

New Zealand, Lyall Bay; on algae; F.W. Hutton.

Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale's Register, no. 148, as "from type."

*geminata*, *Sertularia* Bale, 1884: 78, pl. 5, figs 6, 7, pl. 19, fig. 15.

Syntype (probable): F58802 (1 microslide).

Victoria; Queenscliff, or Portland.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 149, as "co-type." Exact locality of this specimen unknown.

Syntypes (probable): F58803 (1 microslide);

F58804 (1 microslide).

Victoria, Queenscliff.

Remarks: *ex* Bale Coll.

*geniculata*, *Sertularia* Bale, 1888: 768, pl. 17, figs 6–11.

Syntype (probable): F58768 (1 microslide).

Unknown locality; on *Flustra* sp.

Remarks: *ex* Bale Coll.

*gracilis*, *Sertularia* Allman, 1888: 51, pl. 24, figs 1, 1a.

Syntype (possible): F60330 (1 microslide).

Chile [as "Patagonia"], off Port Famine; 53°37.5'S, 70°56.0'W; blue mud; 9 fm [16 m]; dredged; 13 Jan 1876; HMS *Challenger*; Stn 312.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 215. The plate figures are labelled as *S. filiformis*, apparently an earlier manuscript name. Trebilcock labelled the slide as *Sertularella filiformis*. Considered a possible syntype by inference.

*gracillima*, *Sertularia* Bale, 1926: 18, text fig. 3.

Holotype (probable): F58724 (1 microslide).

Unknown locality.

Remarks: *ex* Bale Coll. This slide is labelled "[FIS] Endeavour?"

*implexa*, *Sertularia* Allman, 1888: 54, pl. 26, figs 1, 1a.

Syntype (possible): F60332 (1 microslide).

Atlantic Ocean, between Cape Virgenes, Argentina [as "Cape Virgins"] and the Falkland Islands; 51°35'S, 65°39'W; sand; 70 fm [128 m]; trawled; 21 Jan 1876; HMS *Challenger*; Stn 314.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 217. Trebilcock reidentified and labelled the slide as *Sertularella polyzonias*. Considered a possible syntype by inference.

*inarmata*, *Sertularia trispinosa* Trebilcock, 1928: 22, pl. 5, fig. 4.

Holotype (possible): F59344 (1 microslide).

New Zealand, Island Bay; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. Considered possibly part of the holotype by inference.

*indivisa*, *Sertularella* Bale, 1882: 24, pl. 12, figs 7, 7a.

Syntype (probable): F59068 (1 microslide).

Victoria, Port Phillip Bay, Williamstown.

Remarks: *ex* Bale Coll., *ex* Mapleston Coll. The slide is listed in Bale's Register, no. 44.

Syntype (probable): F58888 (1 microslide);

F60228 (dry).

Victoria, Port Phillip Bay, Williamstown; W.M. Bale.

Remarks: *ex* Bale Coll.

Syntype (probable): F58889 (1 microslide).

Victoria, Port Phillip Bay, St Kilda.

Remarks: *ex* Bale Coll.

*integra*, *Sertularella* Allman, 1876: 262, pl. 13, figs 3, 4.

Syntype: F59301 (1 microslide).

New Zealand.

Remarks: *ex* Bale Coll., *ex* BMNH. The slide is labelled "schizotype."



**integritheca, *Sertularia*** Allman, 1888: 60, pl. 29, figs 2, 2a.

*Syntypes* (possible): F60335 (2 microslides).

Atlantic Ocean, Brazil, off Salvador [as "Bahia"]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slides are listed in Trebilcock's Register, nos. 146, 146a. Trebilcock reidentified and labelled the slides as *Hincksella formosa*. Considered possible syntypes by inference.

**irregularis, *Sertularella*** Trebilcock, 1928: 13, pl. 5, figs 1, 1a, b.

*Syntypes* (possible): F57894 (2 microslides); F57939 (EtOH).

New Zealand, Dunedin, St Clair; 3 May 1923; R.E. Trebilcock.

*Syntypes* (possible): F57941 (1 microslide); F57940 (EtOH).

New Zealand, Dunedin, St Clair; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll. Considered possible syntypes by inference.

**laevis, *Sertularella*** Bale, 1882: 24, pl. 12, fig. 6.

*Syntypes* (probable): F58887 (2 microslides).

Victoria, Port Phillip Bay, Williamstown; W.M. Bale.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 51, as "co-type."

**lata, *Thuiaria*** Bale, 1882: 26, pl. 13, fig. 2.

*Syntype* (probable): F58895 (1 microslide).

Victoria, Griffiths Point; J.R.Y. Goldstein.

Remarks: *ex* Bale Coll. The slide is listed in Bale's Register, no. 72, as "co-type."

**leiocarpa, *Sertularia*** Allman, 1888: 52, pl. 25, figs 1, 1a.

*Syntype*: F58212 (1 microslide).

Atlantic Ocean, Tristan da Cunha, off Nightingale Island; 37°25.5'S, 12°28.5'W; 110 fm [201 m]; dredged; 17 Oct 1873; HMS *Challenger*; Stn 135C.

Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 220, as "from type." Trebilcock reclassified and labelled the slide as *Sertularella leiocarpa*.

**loculosa, *Sertularia*** Busk, 1852: 393.

*Syntype* (possible): F57956 (1 microslide).

Bass Strait; 47 fm [86 m]; 1846–1850; HMS *Rattlesnake*.

Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. Considered a possible syntype by inference.

**longitheca, *Sertularella*** Bale, 1888: 762, pl. 16, figs 5, 6.

*Holotype* (probable): F58764 (1 microslide).

Queensland, Bowen [as "Port Denison"].

Remarks: *ex* Bale Coll.

**macrogonia, *Sertularia*** Bale, 1884: 80, pl. 5, fig. 2, pl. 19, fig. 11.

*Syntypes* (probable): F58805 (1 microslide);

F58806 (1 microslide);

F58807 (2 microslides);

F58808 (2 microslides);

F58810 (dry).

Victoria, Queenscliff.

Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 132 and 133, as "co-types."

*Syntype* (probable): F58809 (1 microslide).

Victoria, Portland; C.M. Maplestone.

Remarks: *ex* Bale Coll.

*Syntype* (possible): F59058 (1 microslide).

Victoria, Queenscliff.

Remarks: *ex* Bale Coll., *ex* Maplestone Coll. Considered a possible syntype by inference.

**macrocarpa, *Sertularella*** Trebilcock, 1928: 11, pl. 1, figs 4, 4a–d.

*Syntypes*: F57892 (2 microslides).

New Zealand, Dunedin, St Clair; Apr–May 1923; R.E. Trebilcock.

Remarks: *ex* Trebilcock Coll.

**macrotheca, *Sertularella*** Bale, 1882: 25, pl. 13, fig. 1.

*Syntype* (probable); F58894 (1 microslide).

Victoria, Griffiths Point; J.R.Y. Goldstein.

Remarks: *ex* Bale Coll.

**maplestonei, *Sertularia*** Bale, 1884: 70, pl. 6, fig. 4, pl. 19, fig. 2.

*Syntypes* (probable): F58797 (1 microslide);

F58798 (1 microslide).

Victoria, Portland; C.M. Maplestone.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 137, as "co-type."

**mccallumi, *Sertularella*** Bartlett, 1907b: 62, unnumbered pl. fig.

*Syntype*: F57884 (1 microslide), previous no. 62763.

Victoria, Queenscliff; G.C. Bartlett.

Remarks: under provisions of the ICZN (1985), the specific name should be emended to *maccallumi*.

**microgonia, *Sertularella*** Lendenfeld, 1884b: 416, pl. 7, figs 1–3.

*Syntype*: F59275 (1 microslide).

Victoria, Port Phillip Bay; "on stones in the Laminarian Zone"; R. von Lendenfeld.

Remarks: *ex* Bale Coll.

**minuta, *Sertularia*** Bale, 1882: 21, pl. 12, fig. 1.

*Syntype* (probable): F58978 (1 microslide).

Victoria, Sorrento; on algae; J.B. Wilson.

Remarks: *ex* Bale Coll.

**monilifera, *Sertularia*** Hutton, 1873: 257.

*Syntype* (possible): F59289 (1 microslide).

New Zealand, Lyall Bay; F.W. Hutton.

Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. Considered a possible syntype by inference.

**muelleri, *Sertularia*** Bale, 1913: 133, pl. 12, figs 1–5.

*Syntypes* (probable): F58738 (4 microslides).

South Australia, Encounter Bay; F. von Mueller.

Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 112, as "co-type."

**mutulata, *Sertularia*** Busk, 1852: 391.

*Syntype* (possible): F57954 (1 microslide).

Torres Strait, Prince of Wales Channel; 9 fm [16 m]; 1846–1850; HMS *Rattlesnake*.

Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. Considered a possible syntype by inference.

**nana, *Sertularia*** Bale, 1926: 17, text fig. 2.

*Holotype* (probable): F58723 (1 microslide).

Victoria, Port Phillip Bay; on *Sertularella peregrina*; J.B. Wilson.

Remarks: *ex* Bale Coll.

**obliquanoda, *Sertularia*** Mulder and Trebilcock, 1914b: 41, pl. 5, figs 1, 1a–e.

*Syntype*: F57971 (1 microslide).

Victoria, Torquay.

Remarks: *ex* Trebilcock Coll.

**olseni, *Amphisbetia*** Watson, 1973: 179, text figs 34–37.

*Holotype*: F42001 (1 microslide), previous no. G2001.

South Australia, Pearson Island, rough watered side of island; on sponge; 33 m; SCUBA; 10 Jan 1969; J.E. Watson.

*Paratypes*: F42002 (1 microslide), previous no. G2002;

F42003 (1 microslide), previous no. G2003;

F42004 (1 microslide), previous no. G2004;

F42097 (formalin), previous no. G2097.

South Australia, Pearson Island, rough watered side of island; on *Herdmania momus*; 33 m; SCUBA; 10 Jan 1969; J.E. Watson.

*Paratypes*: F42005 (1 microslide), previous no. G2005;

F42098 (formalin), previous no. G2098.

- South Australia, Pearson Island, sheltered side of island; on brown algae; 17–23 m; SCUBA; 8 Jan 1969; S.A. Shepherd.  
*Paratype*: F42006 (1 microslide), previous no. G2006.  
South Australia, Pearson Island, rough watered side of island; on red algae; 33 m; SCUBA; 10 Jan 1969; S.A. Shepherd.
- pectinatus, Desmoscyphus*** Allman, 1888: 71, pl. 34, figs 1, 1a, b.  
*Syntype* (possible): F60336 (1 microslide).  
Atlantic Ocean, Brazil, off Salvador [as “Bahia”]; 10–20 fm [18–37 m]; dredged; Sep–Oct 1873; HMS *Challenger*.  
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Trebilcock reidentified and labelled the slide as *Sertularia unguiculata*. Considered a possible syntype by inference.
- peregrina, Sertularella*** Bale, 1926: 19, text fig. 4.  
*Syntype* (probable): F59332 (1 microslide).  
Victoria, Port Phillip Bay, Williamstown.  
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 57, as “co-type.” The material was originally identified by Bale (1884: 104) as *S. polyzonias* Linnaeus, and subsequently by Bale (1915: 280) as *S. gaudichaudi* (Lamouroux), before being established as a new taxon. The slide is still labelled *S. gaudichaudi*.  
*Syntype* (probable): F58725 (1 microslide).  
Victoria, Port Phillip Bay; J.B. Wilson.  
Remarks: *ex* Bale Coll. Also labelled “JBW 741,” probably referring to a systematic listing.  
*Syntypes* (probable): F58726 (5 microslides).  
Victoria, Port Phillip Bay; J.B. Wilson.  
Remarks: *ex* Bale Coll.
- procera, Sertularella*** Trebilcock, 1928: 11, pl. 1, figs 5, 5a–d.  
*Syntype*: F57893 (1 microslide).  
New Zealand, Bluff; 5 May 1923; R.E. Trebilcock.  
Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock’s Register, no. 286.
- pumiloides, Sertularia*** Bale, 1882: 21, pl. 12, fig. 2.  
*Syntype* (probable): F58979 (1 microslide).  
Victoria, Queenscliff; W.M. Bale.  
Remarks: *ex* Bale Coll. The slide is labelled *S. minima* var. *pumiloides*.  
*Syntype* (possible): F59067 (1 microslide).  
Victoria, Queenscliff.  
Remarks: *ex* Bale Coll., *ex* Maplestone Coll. The slide is listed in Bale’s Register, no. 333.
- pygmaea, Sertularella*** Bale, 1882: 25, pl. 12, fig. 9.  
*Syntype* (probable): F58892 (1 microslide).  
Victoria, Queenscliff; W.M. Bale.  
Remarks: *ex* Bale Coll.  
*Syntype* (probable): F58893 (1 microslide).  
Victoria, Griffiths Point; J.R.Y. Goldstein.  
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 61, as “co-type.”
- quadridens, Thuiaria*** Bale, 1884: 119, pl. 7, figs 5, 6.  
*Syntype* (probable): F59061 (1 microslide).  
Queensland, Port Curtis; 5 fm [9 m]; W.A. Haswell.  
Remarks: *ex* Bale Coll., *ex* Maplestone Coll. The slide is listed in Bale’s Register, no. 71, as “co-type.”  
*Syntypes* (probable): F58819 (2 microslides); F58820 (dry).  
Queensland, Port Curtis; 5 fm [9 m]; W.A. Haswell.  
Remarks: *ex* Bale Coll.  
*Syntype* (probable): F58821 (1 microslide).  
Queensland, Holbourne Island [as “Holborn Island”]; 20 fm [37 m]; W.A. Haswell.  
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 70, as “co-type.”
- quasiplana, Sertularella robusta*** Trebilcock, 1928: 18, pl. 6, figs 4, 4a.  
*Syntype* (possible): F60244 (1 microslide).  
New Zealand, Island Bay; 24 Apr 1923; R.E. Trebilcock.  
Remarks: *ex* Trebilcock Coll. The slide is listed in Trebilcock’s Register, no. 307.
- ramulosa, Sertularia*** Coughtrey, 1875: 283, pl. 20, figs 12, 13.  
*Syntypes* (probable): F59291 (2 microslides).  
New Zealand, Dunedin, upper harbour; “festooned from rock to rock, or between branches of a dead floating tree.”  
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale’s Register, no. 129, as “co-type.”
- recta, Sertularia*** Bale, 1882: 23, pl. 12, fig. 5.  
*Syntype* (probable).  
?South Australia, Brighton; T.B. Smeaton.  
Remarks: type specimen not found (see Appendix 1).
- rectangularis, Diphasia*** Lendenfeld, 1884e: 914, pl. 41, figs 6–8.  
*Syntype*: F59286 (1 microslide).  
Torres Strait.  
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 325, as “type.”
- rentoni, Sertularella*** Bartlett, 1907a: 43, 2 unnumbered pl. figs  
*Syntype*: F57883 (1 microslide), previous no. 62762.  
Victoria, Queenscliff.
- robustoides, Sertularella*** Mulder and Trebilcock, 1915: 56, pl. 9, fig. 1.  
*Syntypes*: F57996 (3 microslides).  
Victoria, Thompsons Creek [near Torquay] [as “Bream Creek”].  
Remarks: *ex* Trebilcock Coll.
- rostratus, Symplectoscyphus*** Watson, 1973: 176, text figs 28–30.  
*Holotype*: F41981 (1 microslide), previous no. G1981;  
F42095 (formalin), previous no. G2095.  
*Paratypes*: F41982 (1 microslide), previous no. G1982;  
F41984 (1 microslide), previous no. G1984.  
South Australia, Pearson Island, rough watered side of island; on *Sargassum verruculosum*; 27–30 m; SCUBA; 7 Jan 1969; S.A. Shepherd.  
*Paratype*: F41983 (1 microslide), previous no. G1983.  
South Australia, Pearson Island, rough watered side of island; on bryozoa; 33 m; SCUBA; 10 Jan 1969; S.A. Shepherd.
- simplex, Sertularia*** Hutton, 1873: 257.  
*Syntype* (possible): F59288 (1 microslide).  
New Zealand, Lyall Bay; F.W. Hutton.  
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum.  
Considered a possible syntype by inference.
- simplex, Sertularia*** Lendenfeld, 1884e: 913.  
*Syntype*: F59285 (1 microslide).  
New Zealand, Lyttelton.  
Remarks: *ex* Bale Coll. The slide is listed in Bale’s Register, no. 144, as “type.”
- simplex, Thyroscyphus*** Allman, 1888: 25, pl. 13, figs 1, 2.  
*Syntype* (possible): F60328 (1 microslide).  
Torres Strait, Queensland, Cape York, off Somerset; 8–12 fm [15–22 m]; dredged; Aug–Sep 1874; HMS *Challenger*.  
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Trebilcock reclassified and labelled the slide as *Thyroscyphus torresii*. Considered a possible syntype by inference.
- sinuosa, Thuiaria*** Bale, 1888: 772, pl. 18, figs 9, 10.  
*Holotype* (probable): F58769 (1 microslide).  
Queensland, Port Molle.  
Remarks: *ex* Bale Coll.
- solidula, Sertularella*** Bale, 1882: 24, pl. 12, fig. 8.  
*Syntypes* (probable): F58890 (2 microslides); F58891 (dry).  
Remarks: *ex* Bale Coll. One slide is listed in Bale’s Register, no. 46, as “co-type.”  
*Syntype* (probable): F59234 (1 microslide).



- Remarks: *ex* Bale Coll., *ex* Maplestone Coll. The slide is listed in Bale's Register, no. 45.  
Victoria, Port Phillip Bay, Williamstown; W.M. Bale.
- spiralis*, *Thuiaria*** Trebilcock, 1928: 21, pl. 7, figs 3, 3a–e.  
Syntype (possible): F57898 (1 microslide).  
New Zealand, Bluff; 5 May 1923; R.E. Trebilcock.  
Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.
- subarticulata*, *Thuiaria*** Coughtrey, 1875: 287, pl. 20, figs 32–34.  
Syntypes (possible): F59294 (2 microslides).  
New Zealand, Timaru; M. Coughtrey.  
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale's Register, no. 84, as "co-type."
- subdichotoma*, *Sertularella divaricata*** Bale, 1888: 761, pl. 16, figs 3, 4.  
Syntypes (probable): F58762 (2 microslides).  
New South Wales, Port Jackson.  
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 65, as "type."
- subpinnata*, *Sertularia*** Hutton, 1873: 256.  
Syntypes (probable): F59290 (2 microslides).  
New Zealand, Lyall Bay; F.W. Hutton.  
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. One slide is listed in Bale's Register, no. 60, as "co-type."
- tasmanica*, *Sertularella*** Bale, 1915: 283, pl. 46, fig. 2.  
Syntypes (probable): F58330 (2 microslides).  
Tasmania, off South Cape; 75 fm [137 m]; 1909–1914; FIS *Endeavour*.  
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 55, as "co-type."
- tenuis*, *Sertularia*** Bale, 1884: 82, pl. 5, figs 4, 5, pl. 19, fig. 16.  
Syntypes (probable): F58811 (2 microslides); F60227 (dry).  
Victoria, Port Phillip Bay, Williamstown.  
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 118, as "co-type."
- tenuissima*, *Thuiaria buski*** Trebilcock, 1928: 20, pl. 7, fig. 2.  
Syntype (possible): F57897 (1 microslide).  
New Zealand, Island Bay; Apr–May 1923; R.E. Trebilcock.  
Remarks: *ex* Trebilcock Coll. Considered a possible syntype by inference.
- trispinosa*, *Sertularia*** Coughtrey, 1875: 284, pl. 20, figs 14, 15.  
Syntype (possible): F59292 (1 microslide).  
New Zealand, Timaru.  
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. Considered a possible syntype by inference.
- tuba*, *Sertularia*** Bale, 1884: 87, pl. 4, fig. 11, pl. 19, fig. 17.  
Syntypes (probable): F58813 (1 microslide); F58814 (1 microslide); F58815 (1 microslide); F58816 (dry).  
Victoria, Queenscliff.  
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 81, as "co-type."
- tubatheca*, *Sertularia minima*** Mulder and Trebilcock, 1914b: 40, pl. 4, figs 1, 1a–d.  
Syntypes: F57970 (3 microslides).  
Victoria, Queenscliff.  
Remarks: *ex* Trebilcock Coll.
- undulata*, *Sertularella*** Bale, 1915: 284, pl. 46, fig. 1.  
Holotype (probable): F58331 (1 microslide).  
Tasmania, South Cape; on *S. tasmanica*; 75 fm [137 m]; 1909–1914; FIS *Endeavour*.  
Remarks: *ex* Bale Coll.
- unguiculata*, *Sertularia*** Busk, 1852: 394.  
Syntype (possible): F59330 (1 microslide).  
Tasmania, Banks Strait, Swan Island; "thrown on the beach"; 1846–1850; HMS *Rattlesnake*.  
Remarks: *ex* Bale Coll., *ex* Busk Coll., BMNH. The slide is listed in Bale's Register, no. 140. Considered a possible syntype by inference.
- unilateralis*, *Sertularia*** Allman, 1888: 53, pl. 25, figs 2, 2a, b.  
Syntype: F59312 (1 microslide).  
Indian Ocean, Kerguelen Island, off Accessible Bay; 20 fm [37 m]; 9 Jan 1874; HMS *Challenger*; Stn 149.  
Remarks: *ex* Bale Coll., *ex* BMNH. The slide is listed as "schizotype."
- variabilis*, *Sertularella*** Bale, 1888: 764, pl. 15, figs 5–9.  
Syntype (probable): F58765 (4 microslides).  
New South Wales, Bondi Bay.  
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 47 and 48, as "co-types."  
Syntypes (probable): F58766 (3 microslides).  
New South Wales, Bondi Bay.  
Remarks: *ex* Trebilcock Coll. Two slides are listed in Trebilcock's Register, nos. 272 and 273, as "part of type."  
Syntype (probable): F58767 (3 microslides).  
New South Wales, Coogee.  
Remarks: *ex* Bale Coll. Two slides are listed in Bale's Register, nos. 329 and 330.

## SYNTHECIIIDAE

- alternans*, *Synthecium*** Allman, 1888: 80, pl. 37, figs 2, 2a.  
Syntype: F59324 (1 microslide).  
Remarks: *ex* Bale Coll., *ex* BMNH. The slide is labelled as "type."  
Syntype: F58215 (1 microslide).  
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 207, as "from type." Trebilcock reclassified and labelled the slide as *Hincksella alternans*.  
New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E; hard ground; 30–35 fm [55–64 m]; dredged; 3 Jun 1874; HMS *Challenger*; Stn 163B.
- campylocarpum*, *Synthecium*** Allman, 1888: 78, pl. 37, figs 1, 1a–c.  
Syntype: F59323 (1 microslide).  
Remarks: *ex* Bale Coll., *ex* BMNH. The slide is listed in Bale's Register, no. 105, as "schizotype."  
Syntype: F58214 (1 microslide).  
Remarks: *ex* Trebilcock Coll., *ex* BMNH. The slide is listed in Trebilcock's Register, no. 136, as "from type."  
New South Wales, off Port Jackson; 33°51.25'S, 151°22.25'E; hard ground; 30–35 fm [55–64 m]; dredged; 3 Jun 1874; HMS *Challenger*; Stn 163B.
- dichotoma*, *Staurotheca*** Allman, 1888: 76, pl. 36, figs 1, 1a.  
Syntype (possible): F60337 (1 microslide).  
Indian Ocean, off Marion Island; 46°41'S, 38°10'E; volcanic sand; 85–150 fm [156–275 m]; 27 Dec 1873; HMS *Challenger*; Stn 145A.  
Remarks: *ex* Trebilcock Coll., *ex* BMNH. Considered a possible syntype by inference.
- gracilis*, *Synthecium*** Coughtrey, 1875: 286, pl. 20, figs 26–31.  
Syntype (possible): F59293 (1 microslide).  
New Zealand; Timaru, or Dunedin, Ocean Beach; M. Coughtrey.  
Remarks: *ex* Bale Coll., *ex* Dunedin [Otago] Museum. The slide is listed in Bale's Register, no. 111, as "from Coughtrey's material." Considered a possible syntype by inference. Exact locality of this specimen unknown.
- subventricosum*, *Synthecium*** Bale, 1914a: 5, pl. 1, figs 3–5.

*Syntypes* (probable): F58653 (5 microslides); F58654 (1 microslide).  
Great Australian Bight; "on large plumularians"; 40–100 fm [73–183 m]; 1909–1914; FIS *Endeavour*.  
Remarks: *ex* Bale Coll. One slide is listed in Bale's Register, no. 106, as "co-type."

**Class Anthozoa**  
**Subclass Alcyonaria**  
**Order Alcyonacea**

**ALCYONIIDAE**

*hicksoni*, *Parerythropodium* Utinomi, 1971: 8, text fig. 2, pl. 7, fig. 3.

*Holotype*: F41545 (EtOH), previous no. G1545.  
Victoria, Port Phillip Bay, off Mornington; on *Mytilus planulatus*; 3.5 fm [6 m]; SCUBA; 13 Oct 1957; NMV Port Phillip Survey; Stn 35.

*Paratype*: F41546 (EtOH), previous no. G1546.  
Victoria, Port Phillip Bay, off Portarlington; on *Mytilus planulatus*; 6 fm [11 m]; SCUBA; 11 Sep 1960; NMV Port Phillip Survey; Stn 130.

**NEPHTHEIDAE**

*arbuscula*, *Capnella* Verseveldt, 1977: 185, text figs 7, 8, 43a.

*Paratype*: F42680 (1 EtOH), previous no. G2680.  
South Australia, Investigator Strait; 24 Jan 1971; J.E. Watson; Stn Y12.

*Paratype*: F42681 (1 EtOH), previous no. G2681.  
South Australia, Investigator Strait; 15 Jan 1971; J.E. Watson; Stn Y7.

Remarks: the species description lists F42680 as "NMV 4" and F42681 as "NMV 6."

*erecta*, *Capnella* Verseveldt, 1977: 188, text figs 9, 39a, c.

*Paratype*: F42686 (1 EtOH), previous no. G2686.  
Victoria, S side of Gabo Island; 20–28 m; 19 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.

Remarks: the species description lists F42686 as "NMV 11."

*gaboensis*, *Capnella* Verseveldt, 1977: 190, text figs 10, 44a.

*Paratype*: F42677 (1 EtOH), previous no. G2677.  
Victoria, S side of Gabo Island; 20–28 m; 19 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.

*Paratype*: F42678 (1 EtOH), previous no. G2678.  
New South Wales, Green Cape; 16 m; 13 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.

*Paratypes*: F42679 (2 EtOH), previous no. G2679.  
New South Wales, Merimbula; on reef; 40 ft [12 m]; 29 Dec 1968; K. Batchelor.

Remarks: the species description lists F42677 as "NMV 1," F42678 as "NMV 2," and F42679 as "NMV 3" and "NMV 5."

*johnstonei*, *Capnella* Verseveldt, 1977: 193, text figs 12, 13, 44b.

*Holotype*: F42684 (1 EtOH), previous no. G2684.  
*Paratype*: F59347 (1 EtOH).  
Victoria, W of Cape Nelson; 90–110 fm [165–200 m]; 6 Jun 1969; V. Johnstone.

Remarks: the species description lists G2684 as "NMV 9." The lot "NMV 9" originally included four colonies; the holotype colony (F42684) has been separated, and only one of the three remaining paratype colonies (F59347) has been found.

*Paratype*: F42682 (1 EtOH), previous no. G2682.  
Victoria, SE of Portland; 90–120 fm [165–220 m]; Jun 1969; V. Johnstone.

Remarks: the species description lists F42682 as "NMV 7."  
*Paratype*: F42683 (10 EtOH), previous no. G2683.  
Victoria, SSW of Cape Grant; 120–150 fm [220–275 m]; Jun 1969; V. Johnstone.

Remarks: the species description lists F42683 as "NMV 8."

Only 10 of the original 16 paratype colonies have been located.  
*Paratype*: F42685 (1 EtOH), previous no. G2685.  
New South Wales, off Eden; 38°50.3'S, 148°17.2'E; 179 m; Jun 1972; Bureau of Mineral Resources; MV *San Pedro*.  
Remarks: the species description lists F42685 as "NMV 10."

*portlandensis*, *Capnella* Verseveldt, 1977: 196, text figs 14, 15, 44c.

*Holotype*: F42689 (1 EtOH), previous no. G2689.  
Victoria, SE of Portland; 90–120 fm [164–220 m]; Jun 1969; V. Johnstone.

Remarks: the species description lists G2689 as "NMV 14." The holotype colony has been located, but the remaining two paratype colonies have not been found.

*watsonae*, *Capnella* Verseveldt, 1977: 201, text figs 18, 19, 46a.

*Holotype*: F42687 (1 EtOH), previous no. G2687.  
New South Wales, Green Cape; 16 m; 13 Feb 1973; NMV Mallacoota-Gabo Expedition; J.E. Watson.  
Remarks: the species description lists F42687 as "NMV 12."

**Subclass Zoantharia**  
**Order Actiniaria**

**ISOPHELLIIDAE**

*stela*, *Isophellia* Cutress, 1971: 86, text fig. 1, pl. 9, fig. 1.

*Holotype*: F41547 (EtOH), previous no. G1547.  
*Paratypes*: F41548 (3 EtOH), previous no. G1548.  
Victoria, Port Phillip Bay, off Middle Brighton; 3.5 fm [6 m]; SCUBA; 22 May 1960; NMV Port Phillip Survey; Stn 123.  
Remarks: type specimens not found (see Appendix 1).

**Order Scleractinia**  
**Suborder Caryophylliina**

**CARYOPHYLLIIDAE**

*crenulatus*, *Holcotrochus* Dennant, 1904: 3, pl. 2, figs 4a–c.

*Holotype* (possible).  
South Australia, Backstairs Passage; dredged; 22 fm [40 m].  
Remarks: type specimen not found (see Appendix 1).

*hedleyi*, *Trematotrochus* Dennant, 1906: 152, pl. 5, figs 1a, b.

*Syntypes*: F41519 (4 dry), previous no. G1519.  
New South Wales, 20 miles [32 km] NE of Port Jackson; 250 fm [458 m]; dredged; C. Hedley and W.F. Petterd.  
Remarks: *ex* Dennant Coll.

*perexigua*, *Sphenotrochus emarciatus* Dennant, 1906: 151.

*Syntypes* (possible).  
South Australia: E of Neptune Island, dredged, 45 fm [82 m]; and, off Cape Jaffa, dredged, 90 fm [164 m] and 130 fm [238 m]; and, off Beachport, 49 fm [90 m]; and 150 fm [275 m].  
Remarks: type specimens not found (see Appendix 1).

*petterdi*, *Trochocyathus* Dennant, 1906: 153, pl. 5, figs 2a, b.

*Holotype*: F41515 (dry), previous no. G1515.  
*Paratypes* (possible): F41520 (6 dry), previous no. G1520.  
New South Wales, 20 miles [32 km] NE of Port Jackson; 250 fm [458 m]; dredged; C. Hedley and W.F. Petterd.  
Remarks: *ex* Dennant Coll.

*planilamellata*, *Caryophyllia* Dennant, 1906: 157, pl. 6, figs 4a, b.

*Holotype*: F41521 (dry), previous no. G1521.  
South Australia, off Cape Jaffa; 120–300 fm [220–549 m]; dredged; J.C. Verco; or, off Beachport; 110 fm [201 m]; dredged; J.C. Verco.  
Remarks: *ex* Dennant Coll. Exact locality of holotype specimen not determined.

*recidivus*, *Ceratotrochus* Dennant, 1906: 159, pl. 6, figs



1a, b, 2a–c.

*Syntypes*: F41516 (2 dry), previous no. G1516.

South Australia, off Cape Jaffa; 90 fm [165 m]; dredged; J.C. Verco.

*Syntypes*: F59348 (3 dry).

South Australia, 35 miles [56 km] SW of Neptune Island; 104 fm [190 m]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll.

*suteri*, *Kionotrochus* Dennant, 1906: 155, pl. 5, figs 5a, b.

*Holotype*: F41513 (dry), previous no. G1513.

*Paratypes* (possible): F59350 (39 dry).

New Zealand, 15 miles [24 km] outside Great Barrier Island; 110 fm [201 m]; dredged; H. Suter and C. Hedley.

Remarks: *ex* Dennant Coll.

*verconis*, *Trematotrochus* Dennant, 1904: 5, pl. 1, figs 4a, b.

*Holotype* (possible): not traced.

*Paratypes* (possible): F43273 (9 dry), previous no. G3273.

South Australia, Gulf St Vincent; dredged; J.C. Verco.

*Paratypes* (possible): F43268 (2 dry), previous no. G3268.

South Australia, Kangaroo Island, Cape Borda; dredged; J.C. Verco.

*Paratypes* (possible): F43270 (6 dry), previous no. G3270.

South Australia; Royston Head, Gulf St Vincent, and Backstairs Passage [mixed lot]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll. The holotype designated in the description is untraced. The three lots above are not labelled as types, but are considered possible paratypes by inference.

*vincentinus*, *Deltocyathus* Dennant, 1904: 6, pl. 2, figs 1a–c.

*Holotype* (possible): not traced.

*Paratypes* (possible): F43228 (23 dry), previous no. G3228.

*Paratypes* (possible): F43237 (2 dry), previous no. G3237.

South Australia, Gulf St Vincent; dredged; J.C. Verco.

*Paratypes* (possible): F43231 (19 dry), previous no. G3231.

South Australia, Gulf St Vincent, Yankalilla Bay; 20 fm [37 m]; dredged; J.C. Verco.

*Paratypes* (possible): F43238 (1 dry), previous no. G3238.

South Australia, Gulf St Vincent, off Ardrossan; dredged; J.C. Verco.

*Paratypes* (possible): F43233 (11 dry), previous no. G3233.

South Australia, Kangaroo Island, off Point Marsden; 15 fm [27 m]; dredged; J.C. Verco.

*Paratypes* (possible): F43229 (39 dry), previous no. G3229.

South Australia, Backstairs Passage; dredged; J.C. Verco.

*Paratypes* (possible): F43232 (3 dry), previous no. G3232.

South Australia, Backstairs Passage, off Porpoise Head; 17 fm [31 m]; dredged; J.C. Verco.

*Paratypes* (possible): F43234 (7 dry), previous no. G3234.

South Australia, Backstairs Passage, Newland Head; 20 fm [37 m]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll. The holotype designated in the description is untraced. The eight lots above are not labelled as types, but are considered possible paratypes by inference.

*vittatus*, *Paracyathus* Dennant, 1906: 156, pl. 5, figs 3a, b.

*Holotype*: F41514 (dry), previous no. G1514.

South Australia, Kangaroo Island, off Point Marsden; attached to fragment of shell [Pectinidae]; 17 fm [31 m]; dredged; J.C. Verco.

Remarks: *ex* Dennant Coll.

#### FLABELLIDAE

*radiatus*, *Rhizotrochus* Dennant, 1904: 2, pl. 1, figs 1a, b.

*Holotype* (possible): not traced

*Paratypes* (possible): F43243 (14 dry), previous no. G3243.

South Australia, Gulf St Vincent; dredged; J.C. Verco.

*Paratypes* (possible): F43245 (2 dry), previous no. G3245.

Victoria, Port Phillip Bay; dredged; J.B. Wilson.

Remarks: *ex* Dennant Coll. The holotype designated in the description is untraced. The two lots above are not labelled as

types, but are considered possible paratypes by inference.

*tuberculatum*, *Vasillum* Tenison-Woods, 1879: 93, pl. 10, figs 3, 3a, b.

*Holotype*: F59398 (dry), previous no. 43110.

Victoria, Port Phillip Bay or Bass Strait.

#### Suborder Dendrophylliina

##### DENDROPHYLLIDAE

*atrata*, *Dendrophyllia* Dennant, 1906: 163, pl. 6, figs 5a, b.

*Syntype*: F41517 (1 dry), previous no. G1517.

South Australia, Gulf St Vincent; dredged.

*Syntype*: F59349 (1 dry).

South Australia, Backstairs Passage; 22 fm [40 m]; dredged.

Remarks: *ex* Dennant Coll.

*dilatata*, *Balanophyllia* Dennant, 1904: 10, pl. 1, figs 2a, b.

*Syntypes*: F41512 (2 dry), previous no. G1512.

Victoria, Port Phillip Bay, on "the thallus of *Lithothamnium*" [= *Lithothamnium* sp.]; dredged; J.B. Wilson.

Remarks: *ex* Dennant Coll.

*recta*, *Notophyllia* Dennant, 1906: 163, pl. 5, figs 4a, b.

*Syntypes*: F41518 (3 dry), previous no. G1518.

New South Wales, 20 miles [32 km] NE of Port Jackson, 250 fm [458 m]; dredged; C. Hedley and W.F. Petterd.

Remarks: *ex* Dennant Coll.

#### Suborder Faviina

##### FAVIIDAE

*proximans*, *Plesiastraea* Dennant, 1904: 9, pl. 2, figs 3a, b.

*Holotype* (possible).

South Australia, Gulf St Vincent; dredged; 22 fm [40 m].

Remarks: type specimen not traced (see Appendix 1).

##### MUSSIDAE

*incrustans*, *Homophyllia* Dennant, 1906: 161, pl. 6, figs 3a, b.

*Holotype*: F41511 (dry), previous no. G1511.

South Australia, Gulf St Vincent; on "a valve of *Chione robora*" [= *Placamen placida*]; dredged; R. Tate.

Remarks: *ex* Dennant Coll.

*magna*, *Cylicia* Tenison-Woods, 1878: 325, pl. 4, figs 3a–c.

*Syntypes*: F41522 (2 dry), previous no. G1522.

South Australia, Gulf St Vincent; R. Tate.

Remarks: *ex* Dennant Coll.

#### Order Zoanthinaria

##### EPIZOANTHIDAE

*lividum*, *Parazoanthus* Cutress, 1971: 89, text fig. 2, pl. 9, fig. 4.

*Holotype*: F41549 (EtOH), previous no. G1549.

*Paratype*: F41550 (1 EtOH), previous no. G1550.

Victoria, Port Phillip Bay, off Williamstown; on *Spirasterella* sp.; 29 Jun 1958; NMV Port Phillip Survey.

Remarks: type specimens not found (see Appendix 1).

*sabulosum*, *Epizoanthus* Cutress, 1971: 90, text fig. 3, pl. 9, fig. 3.

*Holotype*: F41551 (EtOH), previous no. G1551.

Victoria, Point Lonsdale; on sponge; 6 fm [11 m]; SCUBA; 15 May 1963; NMV Port Phillip Survey; Stn 293.

Remarks: type specimen not found (see Appendix 1).

#### Acknowledgements

I am grateful to Suzanne Boyd, Thomas Darragh and Brian Smith for assisting with information on the history of the cnidarian collections. I am also grateful to Meg Trebilcock for providing

valuable biographical details on her father-in-law, Lt Col. Richard E. Trebilcock. I also thank Jeanette Watson, David Holloway and Suzanne Boyd for making helpful comments on drafts of the manuscript.

### References

- Allman, G.J., 1876. Diagnoses of new genera and species of Hydroids. *Journal of the Linnean Society (Zoology)* 12: 251–284, pls 9–23.
- Allman, G.J., 1883. Report on the Hydroids dredged by H.M.S. Challenger during the years 1873–76. Part 1. Plumularidae. *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873–76. Zoology* 7(20): 1–54, pls 1–20.
- Allman, G.J., 1888. Report on the Hydroids dredged by H.M.S. Challenger during the years 1873–76. Part 2. The Tubularinae, Corymorphinae, Campanularinae, Sertularinae, and Thalamophora. *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873–76. Zoology* 23(70): lxxix, 1–90, pls 1–39.
- Anonymous, 1907a. J. Dennant, death notice. *The Argus* (Melbourne) 14 Jun 1907, p. 5.
- Anonymous, 1907b. In memoriam: the late John Dennant, F.G.S., F.C.S. *Education Gazette and Teachers' Aid, Victoria* 8(2): 29–30.
- Anonymous [K.N. Bell], 1981. A list of the Tertiary coral types in the National Museum of Victoria. *Fossil Cnidaria* 10(1): 9–11.
- Bale, W.M., 1882. On the Hydroids of south-eastern Australia, with descriptions of supposed new species, and notes on the genus *Aglaophenia*. *Journal of the Microscopical Society of Victoria* 2(1): 15–48, pls 12–15.
- Bale, W.M., 1884. *Catalogue of the Australian hydroid zoophytes*. Australian Museum: Sydney. 198 pp., pls 1–19.
- Bale, W.M., 1887. The genera of the Plumularidae, with observations on various Australian hydroids. *Proceedings of the Royal Society of Victoria* 23: 73–110.
- Bale, W.M., 1888. On some new and rare Hydroids in the Australian Museum collection. *Proceedings of the Linnean Society of New South Wales* (ser. 2) 3: 745–799, pls 12–21.
- Bale, W.M., 1894. Further notes on Australian hydroids, with descriptions of some new species. *Proceedings of the Royal Society of Victoria* 6: 93–117, pls 3–6.
- Bale, W.M., 1913. Further notes on Australian hydroids. 2. *Proceedings of the Royal Society of Victoria* 26(1): 114–147, pls 12, 13.
- Bale, W.M., 1914a. Report on the Hydroids collected in the Great Australian Bight and other localities. *Biological Results of the Fishing Experiments carried on by the F.I.S. "Endeavour," 1909–14* 2(1): 1–62, pls 1–7.
- Bale, W.M., 1914b. Report on the Hydroids collected in the Great Australian Bight and other localities. Part 2. *Biological Results of the Fishing Experiments carried on by the F.I.S. "Endeavour," 1909–14* 2(4): 166–188, pls 35–38.
- Bale, W.M., 1914c. Further notes on Australian hydroids. 3. *Proceedings of the Royal Society of Victoria* 27(1): 72–93, pls 11–13.
- Bale, W.M., 1915. Report on the Hydroids collected in the Great Australian Bight and other localities. Part 3. *Biological Results of the Fishing Experiments carried on by the F.I.S. "Endeavour," 1909–14* 3(5): 241–336, pls 46, 47.
- Bale, W.M., 1919. Further notes on Australian hydroids. 4. *Proceedings of the Royal Society of Victoria* 31(2): 327–361, pls 16, 17.
- Bale, W.M., 1924. Report on some hydroids from the New Zealand coast, with notes on New Zealand Hydroids generally, supplementing Farquhar's list. *Transactions and Proceedings of the New Zealand Institute* 55: 225–268.
- Bale, W.M., 1926. Further notes on Australian hydroids. 5. *Proceedings of the Royal Society of Victoria* 38: 13–23.
- Bartlett, G.C., 1907a. Notes on hydroid zoophytes. *Geelong Naturalist* (ser. 2) 3(3): 35–45, unnumbered pl.
- Bartlett, G.C., 1907b. Notes on hydroid zoophytes. *Geelong Naturalist* (ser. 2) 3(4): 60–66, 2 unnumbered pls
- Blackburn, M., 1937. Notes on Australian Hydrozoa, with descriptions of two new species. *Proceedings of the Royal Society of Victoria* 50(1): 170–181.
- Blackburn, M., 1938. Reports of the expedition of the McCoy Society for Field Investigation and Research. The Sir Joseph Banks Islands. 3. Hydrozoa. *Proceedings of the Royal Society of Victoria* 50(2): 312–328.
- Busk, G., 1852. An account of the Polyzoa, and Sertularian zoophytes, collected in the voyage of the Rattlesnake, on coasts of Australia and the Louisiade Archipelago. Pp. 343–402, pl. 1 in: J. MacGillivray. *Narrative of the Voyage of H.M.S. Rattlesnake*. Vol. 1. Boone: London.
- Coughtrey, M., 1875. Notes on the New Zealand Hydrozoa. *Transactions and Proceedings of the New Zealand Institute* 7: 281–293, pl. 20.
- Cutress, C.E., 1971. Port Phillip Survey. Corallimorpharia, Actiniaria and Zoanthidea. *Memoirs of the National Museum of Victoria* 32: 83–92, pl. 9.
- Dennant, J., 1904. Recent corals from the South Australian and Victorian coasts. *Transactions and Proceedings of the Royal Society of South Australia* 28: 1–11, pls 1, 2.
- Dennant, J., 1906. Madreporaria from the Australian and New Zealand coasts. *Transactions and Proceedings of the Royal Society of South Australia* 30: 151–165, pls 5, 6.
- Ducker, S.C., 1990. History of Australian Marine Phycology. Pp. 415–430 in: M.N. Clayton and R.J. King (eds.). *Biology of Marine Plants*. Longman Cheshire: Melbourne.
- Dunn, D.F., 1982. Cnidaria. Pp. 669–705 in: S.P. Parker (ed. in chief). *Synopsis and Classification of Living Organisms*. Vol. 1. McGraw-Hill: New York.
- Gray, J.E., 1843. Additional radiated animals and annelides. Pp. 292–295 in: E. Dieffenbach. *Travels in New Zealand*. Vol. 2. Murray: London.
- Hilgendorf, F.W., 1898. On the hydroids of the neighbourhood of Dunedin. *Transactions and Proceedings of the New Zealand Institute* 30: 200–218, pls 16–21.
- Hirohito, 1971. *Additional notes on Clathrozoön wilsoni Spencer*. Biological Laboratory, Imperial Household: Tokyo. 5 pp., 1 front., pls 1–4.
- Hutton, F.W., 1873. On the New Zealand Sertularians. *Transactions and Proceedings of the New Zealand Institute* 5: 256–259.
- Hyman, L.H., 1940. *The Invertebrates: Protozoa through Ctenophora*. McGraw-Hill: New York. xii+726 pp.
- Kirchenpauer, G.H., 1864. Neue Sertulariden aus verschiedenen Hamburgischen Sammlungen, nebst allgemeinen Bemerkungen über Lamouroux's Gattung *Dynamena*. *Verhandlungen der K. Leopoldinisch-carolinischen deutschen Akademie der Naturforscher* 31(3): 1–16, pl. figs 1–10.
- Kirchenpauer, G.H., 1872. Ueber die Hydroidenfamilie Plumularidae, einzelne Gruppen derselben und ihre Fruchthälter. 1. *Aglaophenia* Lx. *Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben von dem naturwissenschaftlichen Verein in Hamburg* 5: 1–52, pls 1–8.
- Kirchenpauer, G.H., 1876. Ueber die Hydroidenfamilie Plumularidae, einzelne Gruppen derselben und ihre Fruchthälter. 2. *Plumularia* und *Nemertesia*. *Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben vom Naturwissenschaftlichen Verein zu Hamburg-Altona* 6: 1–59, pls 1–8.
- Lendenfeld, R. von, 1883. Über Coelenteraten der Südsee. 4. Mittheilung. *Eucopeella Campanularia* nov. gen. *Zeitschrift für Wissenschaftliche Zoologie* 38(4): 497–583, pls 27–32.
- Lendenfeld, R. von, 1884a. The Australian Hydromedusae. Part 2. *Proceedings of the Linnean Society of New South Wales* 9(2): 345–353, pl. 6.
- Lendenfeld, R. von, 1884b. The Australian Hydromedusae. Part 3. *Proceedings of the Linnean Society of New South Wales* 9(2): 401–420, pls 7, 8.
- Lendenfeld, R. von, 1884c. The Australian Hydromedusae. Part 4. *Proceedings of the Linnean Society of New South Wales* 9(3): 467–492, pls 12–17.



- Lendenfeld, R. von, 1884d. The Australian Hydromedusae. Part 5. *Proceedings of the Linnean Society of New South Wales* 9(3): 581–634, pls 20–29.
- Lendenfeld, R. von, 1884e. Addenda to the Australian Hydromedusae. *Proceedings of the Linnean Society of New South Wales* 9(4): 908–924, pls 40–43.
- Millard, N.A.H., 1975. Monograph on the Hydroida of southern Africa. *Annals of the South African Museum* 68: 1–513.
- Mulder, J.F. and R.E. Trebilcock, 1909. Notes on Victorian Hydroida, with descriptions of new species. *Geelong Naturalist* 4(1): 29–35, pl. 1.
- Mulder, J.F. and R.E. Trebilcock, 1911. Notes on Victorian Hydroida, with description of new species. Continued. *Geelong Naturalist* 4(4): 115–124, pls 2, 3.
- Mulder, J.F. and R.E. Trebilcock, 1914a. Victorian Hydroida, with description of new species. Part 3. *Geelong Naturalist* 6(1): 6–15, pls 1–3.
- Mulder, J.F. and R.E. Trebilcock, 1914b. Victorian Hydroida, with description of new species. Part 4. *Geelong Naturalist* 6(2): 38–47, pls 4–6.
- Mulder, J.F. and R.E. Trebilcock, 1915. Victorian Hydroida, with description of new species. Part 5. *Geelong Naturalist* 6(3): 51–59, pls 7–9.
- Mulder, J.F. and R.E. Trebilcock, 1916. Notes on Victorian Hydroida. Part 6. *Geelong Naturalist* 6(4): 73–84, pls 10, 11.
- Panning, A., 1956. Beiträge zur Geschichte des Zoologischen Staatsinstituts und Zoologischen Museums in Hamburg. 2 Teil. *Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut* 54:1–20.
- ICZN, 1985. *International Code of Zoological Nomenclature adopted by the XX General Assembly of the International Union of Biological Sciences*. 3rd ed. University of California Press: Berkeley. xx+338 pp.
- Smith, B.J. and J.E. Watson, 1969. A short biography of William Mountier Bale F.R.M.S. (1851–1940). *Victorian Naturalist* 86(4): 105–110.
- Spencer, W.B., 1891. A new family of Hydroidea, together with a description of the structure of a new species of *Plumularia*. *Transactions of the Royal Society of Victoria* 2(1): 121–140, pls 17–23.
- Tenison-Woods, J.E., 1878. On the extratropical corals of Australia. *Proceedings of the Linnean Society of New South Wales* 2(4): 292–341, pls 4–6.
- Tenison-Woods, J.E., 1879. On three new genera and one new species of Madreporaria corals. *Proceedings of the Linnean Society of New South Wales* 3(2): 92–99, pl. 10.
- Trebilcock, R.E., 1928. Notes on New Zealand Hydroida. *Proceedings of the Royal Society of Victoria* 41(1): 1–31.
- Utinomi, H., 1971. Port Phillip Survey. Octocorallia. *Memoirs of the National Museum of Victoria* 32: 7–17, pl. 7.
- Verco, J.C., 1935. *Combing the Southern Seas*. Mail Newspapers: Adelaide. 174 pp., pls 1–18.
- Verseveldt, J., 1977. Australian Octocorallia (Coelenterata). *Australian Journal of Marine and Freshwater Research* 28(2): 171–240.
- Watson, J.E., 1969. *Scoresbia* a new hydroid genus from South Australian waters. *Transactions of the Royal Society of South Australia* 93: 111–116, pl. 1.
- Watson, J.E., 1973. Pearson Island Expedition 1969. 9. Hydroids. *Transactions of the Royal Society of South Australia* 97(3): 153–200.
- Watson, J.E., 1975. Hydroids of Bruny Island, southern Tasmania. *Transactions of the Royal Society of South Australia* 99(4): 157–176.
- Watson, J.E., 1978. New species and new records of Australian athecate hydroids. *Proceedings of the Royal Society of Victoria* 90(2): 301–314.
- Watson, J.E., 1980. The identity of two tubularian hydroids from Australia with a description and observations on the reproduction of *Ralpharia magnifica* gen. et sp. nov. *Memoirs of the National Museum of Victoria* 41: 53–63.
- Watson, J.E., 1984. Two new species of tubularian hydroids from southern Australia. *Memoirs of the Museum of Victoria* 45(1): 7–12.
- Watson, J.E., 1985. The genus *Eudendrium* (Hydrozoa: Hydroida) from Australia. *Proceedings of the Royal Society of Victoria* 97(4): 179–221.
- Wells, J.W., 1956. Scleractinia. Pp. F328–444 in: R.C. Moore (ed.). *Treatise on Invertebrate Paleontology. Part F. Coelenterata*. Geological Society of America and University of Kansas Press: Lawrence.

### Appendix 1. - Missing types

The Museum of Victoria is presumed to hold in virtual entirety, the Bale and Trebilcock collections of hydroids and the Dennant collection of scleractinian corals. Type material of all species described by Bale or Trebilcock should be expected to be located in the Department of Invertebrate Zoology collection (except where otherwise denoted in their respective publications). The same may be said for type material of taxa described by Dennant, that should be expected to be found in either the Department of Invertebrate Zoology or Department of Invertebrate Palaeontology collections. Type materials of species described by Cutress (1971), stated as being deposited in the Museum, have not been located and their whereabouts are unknown.

Where type or possible type specimens of taxa described by Bale, Cutress, Dennant, Mulder and Trebilcock, and Trebilcock have not been located in the collections, they should be assumed to be missing. Such taxa with missing type specimens include the following :

*Campanularia pumila* Bale, 1914  
*Campanulina humilis* Bale, 1924\*  
*Plumularia indivisa* Bale, 1882  
*Sertularella cylindrica* Bale, 1888\*  
*Sertularia acanthostoma* Bale, 1882\*  
*Sertularia recta* Bale, 1882

*Epizoanthus sabulosum* Cutress, 1971  
*Isophellia stela* Cutress, 1971  
*Parazoanthus lividum* Cutress, 1971

*Holcotrochus crenulatus* Dennant, 1904\*  
*Plesiastraea proximans* Dennant, 1904  
*Sphenotrochus emarciatus perexigua* Dennant, 1906

*Plumularia campanula geelongensis* Mulder and Trebilcock, 1916\*  
*Plumularia dubiaformis* Mulder and Trebilcock, 1911

*Saaba scandens* Trebilcock, 1928  
*Thecocarpus formosus inarmatus* Trebilcock, 1928

For taxa labelled above with an asterisk (\*) there exists additional material (from other than the presumed type locality) identified by authors in their own hand. Future workers could consider this material to assist in the identification of particular species. Details of such material, listed by species in alphabetical order, are as follows :

*acanthostoma*, *Sertularia* Bale, 1882 : 23, pl. 12, fig. 4  
 F60230, F60231, F60232 (3 microslides).  
 Victoria, Port Fairy [as "Belfast"].  
 Remarks : ex Bale Coll. One slide is listed in Bale's Register, no. 100.  
 F60233 (1 microslide).  
 Victoria, Port Fairy.  
 Remarks : ex Bale Coll.  
 F60234 (dry).  
 Victoria, Portland.  
 remarks : ex Bale Coll.

*crenulatus*, *Holcotrochus* Dennant, 1904 : 3, pl. 2, figs 4a–c.  
 F60235 (2 dry)

South Australia, Gulf St Vincent; dredged; J.C. Verco.  
Remarks : *ex* Dennant Coll.  
F60236 (10 dry)  
South Australia, Kangaroo Island, Cape Borda; dredged; J.C. Verco.  
Remarks : *ex* Dennant Coll.

*cylindrica*, *Sertularella* Bale, 1888 : 765, pl. 16, fig. 7  
F60237 (1 microslide).  
Victoria, Queenscliff; 27 Feb 1907.  
Remarks : *ex* Bale Coll.

*geelongensis*, *Plumularia campanula* Mulder and Trebilcock, 1916 : 76, pl. 11, figs 2, 2a-c.  
F60238, F60239 (2 microslides).  
Victoria, Thompson's Creek [near Torquay] [as "Bream Creek"].  
Remarks : *ex* Trebilcock Coll. Reclassified by Trebilcock as *Orthopyxis geelongensis*.

*humilis*, *Campanulina* Bale, 1924 : 235, text fig. 5  
F60240 (1 microslide).  
Victoria, Port Phillip Bay, Schnapper Point; on *Halicornaria baileyi*.  
Remarks : *ex* Bale Coll.

*recta*, *Sertularia* Bale, 1882 : 23, pl. 12, fig. 5.  
F60241, F60242 (2 microslides).  
Bass Strait.  
Remarks : *ex* Bale Coll.

Species Index

- abietina*, *Plumularia* 7
- acanthocarpa*, *Aglaophenia* 7
- acanthostoma*, *Sertularia* 14, 23
- adamsia*, *Pennaria* 4
- adcocki*, *Sertularia* 14
- aglaopheniaformis*, *Plumularia* 7
- aglaophenoides*, *Plumularia* 7
- alata*, *Plumularia* 8
- alternans*, *Synthecium* 19
- alternatella*, *Plumularia* 8
- ambiplica*, *Campanularia* 4
- angulata*, *Cryptolaria* 7
- angulata*, *Orthopyxis* 4
- angulosa*, *Obelia* 4
- angulosa*, *Sertularella* 14
- annulata*, *Reticularia* 7
- annulata*, *Sertularia* 14
- annulaventricosa*, *Sertularella* 15
- arbuscula*, *Capnella* 20
- arenosa*, *Sacculina* 3
- armata*, *Aglaophenia* 8
- armata*, *Plumularia* 8
- ascidioides*, *Aglaophenia* 8
- asymmetrica*, *Plumularia* 8
- atrata*, *Dendrophyllia* 21
- aurea*, *Halicornaria* 8
- aurita*, *Plumularia* 8
- australiensis*, *Plumularia* 8
- australis*, *Bimeria* 3
- australis*, *Dynamena* 15
- australis*, *Halocordyle* 3
- australis*, *Obelia* 4
- australis*, *Ophiodes* 6
- australis*, *Pennaria* 4
- australis*, *Plumularia obliqua* 8
- avia*, *Amphisbetia* 15
- avicularis*, *Halicornopsis* 8
- avrilia*, *Sertularella* 15
- aylingae*, *Eudendrium* 3
- baileyi*, *Halicornaria* 8
- bakeri*, *Aglaophenia* 8
- balei*, *Eudendrium* 3
- balei*, *Plumularia* 8
- banksii*, *Plumularia* 8
- betkensis*, *Stylactis* 3
- bicornis*, *Sertularia* 15
- bidens*, *Sertularia* 15
- bilabiata*, *Campanularia* 4
- billardi*, *Aglaophenia* 8
- birostrata*, *Halicornaria* 8
- biseptata*, *Kirchenpaueria* 9
- blackburni*, *Ophiodissa* 6
- brevicaulis*, *Aglaophenia* 9
- briggsi*, *Aglaophenia divaricata* 9
- briggsi*, *Lovenella* 7
- bruniensis*, *Halecium* 6
- buchananae*, *Halecium* 6
- buskii*, *Plumularia* 9
- calamus*, *Aglaophenia* 9
- caliculata*, *Plumularia* 9
- calycifera*, *Aglaophenia* 9
- campanulaformis*, *Plumularia* 9
- campanularia*, *Eucopella* 4
- campylocarpum*, *Synthecium* 19
- carinata*, *Aglaophenia* 9
- carinifera*, *Aglaophenia* 9
- cerastium*, *Thuiaria* 15
- chiltoni*, *Thecocarpus* 9
- ciliata*, *Nemertesia* 9
- coccinea*, *Ralpharia* 4
- compressa*, *Plumularia* 9
- cornuta*, *Plumularia* 9
- corrugata*, *Plumularia setaceoides* 9
- corrugatissimum*, *Halecium* 6
- corrugatum*, *Eudendrium* 3
- costata*, *Campanularia* 4
- coughtreyi*, *Obelia* 4
- crassicaulis*, *Cryptolaria* 7
- crassiuscula*, *Sertularella* 15
- crateriformis*, *Plumularia setaceoides* 10
- crateroides*, *Plumularia* 10
- crenata*, *Sertularia* 15
- crenulatus*, *Holcotrochus* 20, 23
- cruciata*, *Nemertesia ciliata* 10
- cryptus*, *Hybocodon* 4
- cyathifera*, *Lictorella* 7
- cylindrica*, *Antennularia* 10
- cylindrica*, *Sertularella* 15, 24
- cylindritheca*, *Sertularia* 15
- cystifera*, *Aglaophenia divaricata* 10
- dannevigi*, *Aglaophenia* 10
- decumbens*, *Aglaophenia* 10
- delicata*, *Orthopyxis* 4
- delicatula*, *Plumularia* 10
- diadala*, *Scoresbia* 6
- dichotoma*, *Staurotheca* 19
- dichotomum*, *Dictyocladium* 15
- dichotomum*, *Halecium* 6
- dichotomus*, *Diplocyathus* 6
- dilatata*, *Balanophyllia* 21
- distans*, *Hypopyxis* 15
- divaricata*, *Sertularia* 15
- divergens*, *Sertularia* 15
- dolichocarpa*, *Thuiaria* 15
- dubia*, *Plumularia campanulaformis* 10
- dubia*, *Sertularella divaricata* 15
- dubiaformis*, *Plumularia* 10
- edentula*, *Sertularella* 15
- effusa*, *Acanthella* 10



- effusa*, *Plumularia* 10  
*epibracteolosa*, *Plumularia* 10  
*epizoicus*, *Symplectoscyphus* 15  
*erecta*, *Capnella* 20  
*everta*, *Plumularia* 10  
*excavata*, *Plumularia* 10  
*exigua*, *Sertularia* 16  
*expansum*, *Halecium* 6  
*exxonina*, *Tubularia* 4  
*farquhari*, *Thuiaria* 16  
*fasciculata*, *Dynamena* 16  
*fenestrata*, *Thuiaria* 16  
*fertilis*, *Sertularia* 16  
*flabellum*, *Plumularia* 10  
*flabellum*, *Thecocladium* 16  
*flexile*, *Halecium* 6  
*flexuosa*, *Lineolaria* 7  
*flexuosa*, *Plumularia* 10  
*flucticulata*, *Sertularella robusta* 16  
*formosa*, *Orthopyxis* 4  
*furcata*, *Halicornaria* 10  
*fusca*, *Sertularella* 16  
*fusiformis*, *Sertularia* 16  
*gaboensis*, *Capnella* 20  
*geelongensis*, *Plumularia campanula* 10, 24  
*geminata*, *Sertularia* 16  
*geniculata*, *Sertularia* 16  
*goldsteini*, *Plumularia* 11  
*gracile*, *Halecium* 6  
*gracilis*, *Cryptolaria* 7  
*gracilis*, *Plumularia* 11  
*gracilis*, *Sertularia* 16  
*gracilis*, *Synthecium* 19  
*gracilis*, *Tubularia* 4  
*gracillima*, *Sertularia* 16  
*haswellii*, *Halicornaria* 11  
*hedleyi*, *Trematotrochus* 20  
*heterocarpa*, *Aglaophenia* 11  
*heterogona*, *Thecocalus* 11  
*hicksoni*, *Parerythropodium* 20  
*humilis*, *Campanulina* 5, 24  
*humilis*, *Halicornaria* 11  
*huxleyi*, *Plumularia* 11  
*hyalina*, *Plumularia* 11  
*ilicistoma*, *Aglaophenia* 11  
*implexa*, *Sertularia* 16  
*inarmata*, *Lineolaria* 7  
*inarmata*, *Sertularia trispinosa* 16  
*inarmatus*, *Thecocalus formosus* 11  
*incrustans*, *Homophyllia* 21  
*indivisa*, *Plumularia* 11  
*indivisa*, *Sciurella* 11  
*indivisa*, *Sertularella* 16  
*insignis*, *Grammaria* 6  
*insignis*, *Plumularia* 11  
*integra*, *Sertularella* 16  
*integritheca*, *Sertularia* 16  
*intermedia*, *Halicornaria* 11  
*irregularis*, *Sertularella* 17  
*johnstonei*, *Capnella* 20  
*laevis*, *Sertularella* 17  
*lata*, *Thuiaria* 17  
*laxa*, *Aglaophenia* 11  
*leiocarpa*, *Sertularia* 17  
*lenticulare*, *Halecium* 6  
*lividum*, *Parazoanthus* 21  
*loculosa*, *Sertularia* 17  
*longicornis*, *Plumularia* 11  
*longitheca*, *Sertularella* 17  
*lucerna*, *Plumularia* 11  
*luteum*, *Halecium* 6  
*macrocarpa*, *Aglaophenia* 11  
*macrocarpa*, *Sertularia* 17  
*macrogonia*, *Sertularella* 17  
*macrotheca*, *Sertularella* 17  
*magna*, *Cylicia* 21  
*magnifica*, *Ralpharia* 4  
*maplestonei*, *Sertularia* 17  
*marginata*, *Campanularia* 5  
*marlina*, *Rosalinda* 4  
*mccallumi*, *Sertularella* 17  
*mccoyi*, *Aglaophenia* 11  
*megalocarpa*, *Aglaophenia* 12  
*meretricia*, *Plumularia* 12  
*merulum*, *Eudendrium* 3  
*microgonia*, *Sertularella* 17  
*microscopica*, *Plumularia* 12  
*minima*, *Sarsia* 3  
*minuta*, *Sertularia* 17  
*minutum*, *Eudendrium* 3  
*minutus*, *Thecocalus* 12  
*mirabilis*, *Diplocheilus* 12  
*monilifera*, *Sertularia* 17  
*muelleri*, *Sertularia* 17  
*mulderi*, *Aglaophenia* 12  
*multiseptata*, *Cladocarpella* 12  
*mutulata*, *Sertularia* 17  
*nambuccense*, *Eudendrium* 3  
*nana*, *Sertularia* 17  
*nodosa*, *Obelia* 5  
*obesa*, *Plumularia* 12  
*obliquanoda*, *Sertularia* 17  
*olseni*, *Amphisbetia* 17  
*operculata*, *Merona* 3  
*opima*, *Plumularia setacea* 12  
*opposita*, *Plumularia* 12  
*parkeri*, *Calycella* 4  
*parvula*, *Aglaophenia* 12  
*parvulum*, *Halecium* 6  
*pearsonensis*, *Clytia* 5  
*pectinata*, *Perisiphonia* 7  
*pectinatus*, *Desmoscyphus* 17  
*peregrina*, *Sertularella* 18  
*perexigua*, *Sphenotrochus emarciatus* 20  
*petterdi*, *Trochocyathus* 20  
*phoenicea*, *Plumularia* 12  
*phyllocarpa*, *Aglaophenia* 12  
*planilamellata*, *Caryophyllia* 20  
*platycarpa*, *Orthopyxis* 5  
*pluma*, *Heteroplion* 12  
*plumosa*, *Aglaophenia* 12  
*portlandensis*, *Capnella* 20  
*procera*, *Sertularella* 18  
*procumbens*, *Plumularia* 12  
*producta*, *Plumularia* 13  
*prolifera*, *Aglaophenia* 13  
*proximans*, *Plesiastrea* 21  
*pulchella*, *Cryptolaria* 7  
*pulchella*, *Plumularia* 13  
*pulchratheca*, *Campanularia* 5  
*pumila*, *Campanularia* 5  
*pumiloides*, *Sertularia* 18  
*pusillum*, *Eudendrium* 3  
*pygmaea*, *Sertularella* 18  
*quadridentis*, *Thuiaria* 18  
*quadriseriata*, *Perisiphonia* 7  
*quasiplana*, *Sertularella robusta* 18  
*racemiferus*, *Lytocarpus* 13  
*radiatus*, *Rhizotrochus* 21  
*ralphii*, *Tubularia* 4

- ramosa*, *Plumularia* 13  
*ramsayi*, *Plumularia* 13  
*ramulosa*, *Sertularia* 18  
*recidivus*, *Ceratotrochus* 20  
*recta*, *Notophyllia* 21  
*recta*, *Sertularia* 18, 24  
*rectangularis*, *Diphasia* 18  
*rentoni*, *Sertularella* 18  
*retroflexa*, *Campanularia* 5  
*robustoides*, *Sertularella* 18  
*robustum*, *Halecium* 7  
*rosea*, *Pennaria* 4  
*rostrata*, *Halicornaria* 13  
*rostratus*, *Symplectoscyphus* 18  
*rotunda*, *Plumularia delicatula* 13  
*rubens*, *Aglaophenia* 13  
*rubra*, *Plumularia* 13  
*rufa*, *Campanularia* 5  
*sabulosum*, *Epizoanthus* 21  
*scandens*, *Halicornaria urceolifera* 13  
*scandens*, *Lafoea* 7  
*scandens*, *Saaba* 3  
*serrulata*, *Campanularia* 5  
*setaceaformis*, *Plumularia* 13  
*setaceoides*, *Plumularia* 13  
*simplex*, *Sertularia* 18  
*simplex*, *Thyroscyphus* 18  
*sinuosa*, *Aglaophenia* 13  
*sinuosa*, *Thuiaria* 18  
*solidula*, *Sertularella* 18  
*spectabilis*, *Lytocarpus* 13  
*spinulosa*, *Campanularia* 5  
*spinulosa*, *Plumularia* 13  
*spiralis*, *Thuiaria* 18  
*spongicola*, *Tubularia* 4  
*squarrosa*, *Aglaophenia* 13  
*stela*, *Isophellia* 20  
*stentor*, *Grammaria* 6  
*stolonifera*, *Clytia* 5  
*subarticulata*, *Thuiaria* 19  
*subdichotoma*, *Sertularella divaricata* 19  
*subpinnata*, *Sertularia* 19  
*subventricosum*, *Synthecium* 19  
*superba*, *Aglaophenia* 13  
*suteri*, *Kionotrochus* 21  
*tasmanica*, *Aglaophenia* 13  
*tasmanica*, *Sertularella undulata* 19  
*telescopicum*, *Halecium* 7  
*tenuis*, *Sertularia* 19  
*tenuissima*, *Aglaophenia* 14  
*tenuissima*, *Thuiaria buski* 19  
*thompsoni*, *Aglaophenia* 14  
*togata*, *Plumularia* 14  
*torresia*, *Plumularia* 14  
*trebilcocki*, *Gattya* 14  
*tridentata*, *Campanularia* 5  
*tripartita*, *Plumularia* 14  
*trispinosa*, *Sertularia* 19  
*tuba*, *Sertularia* 19  
*tubatheca*, *Sertularia minima* 19  
*tuberculatum*, *Vasillum* 21  
*tubulifera*, *Halicornaria* 14  
*tubulosa*, *Plumularia* 14  
*turgida*, *Plumularia* 14  
*undulata*, *Eucopella* 5  
*undulata*, *Sertularella* 19  
*unguiculata*, *Sertularia* 19  
*unilateralis*, *Sertularia* 19  
*variabilis*, *Sertularella* 19  
*verconis*, *Trematotrochus* 21  
*vincentinus*, *Deltocyathus* 21  
*vittatus*, *Paracyathus* 21  
*watsonae*, *Capnella* 20  
*wattsii*, *Plumularia* 14  
*whiteleggei*, *Aglaophenia* 14  
*wilsoni*, *Clathrozoön* 5  
*wilsoni*, *Orthopyxis* 5  
*zygocladia*, *Plumularia* 14



# Australian fossil echinoids: annotated bibliography and list of genera and species

Francis C. Holmes

15 Kenbry Road, Heathmont, Victoria 3135, Australia  
and Department of Invertebrate Palaeontology,  
Museum of Victoria, 285–321 Russell Street, Melbourne, Victoria 3000, Australia

Abstract. Holmes, F. C. (1993). Australian fossil echinoids: annotated bibliography and list of genera and species. *Occasional Papers from the Museum of Victoria* 6: 27–54.

Over 330 references to papers and other manuscripts containing taxonomic and locality information on Australian fossil echinoids are listed in a comprehensive annotated bibliography. Based on this information a separate list of genera and species records 167 echinoid taxa from the continent's marine deposits, excluding undescribed new species listed by Philip (1970).

## Introduction

Since the turn of the century, only three general bibliographies have been published which include comprehensive lists of references to the literature of Australian fossil echinoids. They are by Dennant and Kitson (1903), H. L. Clark (1946), and Philip (1963a). None of these bibliographies is annotated and only the last relates solely to the Echinoidea.

This annotated bibliography and list of genera and species does not include references to extant species, except those containing the original description (or illustration) of species which have subsequently been discovered in the Australian fossil record; e.g. Leske (1778), Blainville (1825), Valenciennes (1846), Gray (1851), Mortensen (1904). Unpublished reports and university post-graduate theses are excluded. However, non-taxonomic references which contain faunal lists, illustrations or records of echinoids occurring at specific localities are included.

Many references, notably those from the nineteenth century, give only very general locality information and often no indication of the horizon in which the fossils were found, thus making it extremely difficult to determine their correct geological age.

While further collecting, together with current stratigraphic knowledge, can solve many of these problems, there are several references to the occurrence of fossil echinoids which remain suspect, either because of poor or wrong locality information in the first instance or by errors that have crept into subsequent (secondary) references. The annotated 'description of contents' of each reference in the bibliography, where applicable, lists the published generic and specific names, locality names, age and spelling used, as well as page and plate numbers. The abridged synonymy contained in the alphabetical list of genera and species should be used to determine the currently accepted binomial nomenclature.

Although some references contain material repeated from previous papers by the same author or extracts from another author's work, they have been included for consistency and to direct researchers to a wide range of associated information.

## Historical note

The history of discovery and subsequent description of fossil echinoids in Australia, from the first record of their occurrence in the Murray River cliffs by Captain Charles Sturt (1833) up to the late 1950s, has been well documented by Philip (1963a).

Between the late 1860s and the beginning of this century, a

large volume of literature was published on Australian palaeontology including many important papers on the echinoid fauna by Bittner, Duncan, Etheridge, Gregory, Hall, Laube, McCoy, Tate and others. While much of the original nomenclature given to these early discoveries has been changed over the years, often because of the poor preservation of detail in many of the originally described specimens, their work forms an invaluable basis for the current revision of most major families and genera found in Australia.

From 1910 until the early 1960s, with the exception of Chapman and Cudmore (1928, 1934), work on Tertiary echinoids was virtually non-existent in this country. Even *The echinoderm fauna of Australia. Its composition and its origin* (H. L. Clark, 1946) relies almost entirely on pre-1900 literature for its information on fossil species. It is only in the last 30 years or so that palaeontologists such as Foster, Kruse, McNamara and Philip have begun to systematically update knowledge of Australian fossil echinoids. Major papers cover the revision of brissids, hemiasterids, holasterids, and schizasterids, as well as species of the genera *Echinolampas*, *Eupatagus* and *Pericosmus*, among others. In addition, between 1963 and 1969, Philip recorded 53 species of regular echinoids in a series of four papers on the Tertiary echinoids of south-eastern Australia.

Groups yet to be revised include the clypeasteroids and non-echinolampadid cassiduloids. In addition, a considerable number of new species await description.

## Annotated bibliography and chronological index of authors

Plate and figure numbers are not included in the main reference if they have been allotted page numbers in the manuscript.

All references, unless otherwise stated, have been compiled from original or facsimile manuscripts.

The annotated 'description of contents' lists relevant information as published. Comments or notes on the contents of manuscripts are included in square brackets and use currently accepted nomenclature.

To assist with research into the synonymy and discovery of Australian echinoids, a chronologically arranged index of authors is provided at the end of the annotated bibliography.

Abele, C., 1976. Revision of Tertiary rock unit nomenclature in the Maude area, Victoria. *Mines Department, Victoria, Geological Survey Report* 1976/2: 1–6 + figs 1, 2, 4.

Refers to echinoids (including *Fibularia*) in the Lower Maude Limestone Member (p. 2).

Abele, C., 1979. Geology of the Anglesea area, central coastal Victoria. *Geological Survey of Victoria Memoir* 31: 1–71, fig. 7, map.

Refers to echinoids in descriptions of specific units within various stratigraphic sections between Yellow Bluff, Torquay and Split Point, Aireys Inlet (pp. 21, 23, 25, 26, 27, 30, 32) and in general notes on Demons Bluff Fm., Anglesea Member (p. 42); Jan Juc Fm. (p. 44); Puebla Fm., Zeally Limestone Member (p. 47). Also lists characteristic echinoids from the undifferentiated part of the Jan Juc Formation, the Point Addis Limestone Member and the Zeally Limestone Member (p. 49). [Note: the latter is a repeat of information given in Singleton, 1968 and 1973.]

Abele, C., 1988a. Mesozoic and Cainozoic stratigraphy of Victoria. Pp. 39–46 in I. Clark, B. Cook and G. C. Cochrane (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).

Refers to characteristic Tertiary echinoid assemblages in calcarenite from southern basins (p. 42) and notes [with other groups], although biostratigraphically significant, they have not been fully described (p. 43). Figures *Lovenia forbesi* from Murray cliffs (pls 4 1/b, c)

Abele, C., 1988b. Western District: Torquay-Anglesea-Aireys Inlet. Pp. 119–131 in I. Clark, B. Cook and G. C. Cochrane (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).

Notes occurrence of echinoids in the Zeally Limestone Member (pp 123–124).

Abele, C. et al., 1976. Tertiary. Pp. 177–274 in J. G. Douglas and J. A. Ferguson (eds), *Geology of Victoria* (first edition). *Geological Society of Australia, Melbourne, Special Publication* 5.

Includes numerous references to the occurrence of echinoids, including spines and fragments, in various stratigraphic horizons in the Tertiary of Victoria, many of which are little known (pp 179, 195(2), 196(2), 210, 211(2), 213(2), 214(2), 222(2), 233, 234(3), 235(2), 239, 242, 258(2), 259, 260(5), 261, 262). *Clypeaster gippslandicus* McCoy is figured on p. 249. [Note: information repeated in Abele, C. et al., 1988.]

Abele, C. et al., 1988. Tertiary. Pp. 251–350 in J. G. Douglas and J. A. Ferguson (eds), *Geology of Victoria* (second edition). Victorian Division, Geological Society of Australia Incorporated: Melbourne.

Includes numerous references to the occurrence of echinoids, including spines and fragments, in various stratigraphic horizons in the Tertiary of Victoria, many of which are little known (pp. 253, 269(2), 270(2), 284, 285(2), 287(2), 288(2), 296(2), 307, 308(3), 309(2), 313, 316, 332(2), 333, 334(5), 335, 336). *Clypeaster gippslandicus* McCoy is figured on p. 323. [Note: text references do not vary (other than page numbers) from those in Abele, C. et al., 1976]

Anon. (Holmes, F. C.), 1981. Some common irregular echinoids from the Point Addis Limestone and Jan Juc Marl, Torquay, Victoria. *The Fossil Collector* 4: 10–12.

Brief note on the occurrence of echinoids in the above members with figures of *Echinolampas posterocrassus*, *Cassidulus florescens*, *Eupatagus murrayensis*, *Duncanaster australiae*, *Monostychia australis*.

Archbold, N. W., 1990. J. E. Tenison Woods: His contributions to the Tertiary geology of south eastern Australia. *Journal and Proceedings of the Royal Society of New South Wales* 122(3): 119–121.

Refers to the confusion as to the authorship of *Lovenia forbesi* (p. 119) and includes copies of the illustrations of *Lovenia* by Sturt (1833), Forbes (1852) and Tenison Woods (1862), p. 121, text fig. A–E

Aslin, D., 1980. The *Lovenia* question-*forbesi* or *woodsii*. *The Fossil Collector* 2: 9–12.

Discusses and illustrates the difference between *Lovenia forbesi* and *L. woodsii*.

Baker, G., 1943. Eocene deposits south-east of Princetown, Victoria. *Proceedings of the Royal Society of Victoria* 55(2): 237–254, pl. 10.

Refers to the presence of *Schizaster* in (?) Eocene deposits between the Pebble Point Beds and Pleistocene dune limestone south-east of Princetown, Victoria (p. 245).

Baker, G., 1944. The geology of the Port Campbell District. [Includes Appendix - The forminifera of the Tertiary beds exposed in the coastal sections between the mouth of the Gellibrand River and Curdie's Inlet, by W. J. Parr]. *Proceedings of the Royal Society of Victoria* 56(1): 77–108.

Lists echinoids on pp. 88, 89, 91–94 including *Paradoxechinus novus* Laube, *Lovenia forbesi* Tenison Woods, *Schizaster sphenoides* Hall, *Brissopsis tatei* Hall, *Maretia anomala* Duncan, *Eupatagus laubei* Duncan, *Linthia compressa* (Duncan), *Clypeaster* cf. *gippslandicus* McCoy, and echinoid spines.

Bartrop, S., 1983. Australian fossil spatangoid echinoids. Pp. 691–755 in P. V. Rich, R. K. Bearlin and D. M. Long (eds), *A Pot-Pourri of Australian Fossils (Invertebrates and Plants)*, volume 2. Clayton, Victoria [no publisher stated].

One of a series of reports compiled by 3rd year students, Earth Sciences Department, Monash University, Clayton. Includes numerous abridged descriptions accompanied by figures reproduced from earlier manuscripts.

Basedow, H., 1901. On the occurrence of Miocene limestones at Edithburgh, and their stratigraphical relationship to the Eocene of Wool Bay, with description of a new species by Professor R. Tate. *Transactions and Proceedings and Report of the Royal Society of South Australia* 25: 145–148, pl. 3.

Notes *Fibularia gregata*, *Scutellina patella* and *Paradoxechinus novus* in polyzoal limestone a quarter of a mile north of Edithburgh, Yorke Peninsula (p. 145). Also refers to *Fibularia gregata* and other echinoids in a well section one and a quarter miles west of the town (p. 147).

Beardsmore, T., 1983. Echinoids: Australian varieties and their biostratigraphic use. Pp. 647–690 in P. V. Rich, R. K. Bearlin and D. M. Long (eds), *A Pot-Pourri of Australian Fossils (Invertebrates and Plants)*, volume 2. Clayton, Victoria [no publisher stated].

One of a series of reports compiled by 3rd year students, Earth Sciences Department, Monash University, Clayton. Includes a few abridged descriptions accompanied by figures.

Bell, K. N., 1991. Fossil pedicellariae. *The Fossil Collector* 34: 27–29.

Notes the discovery of several tridentate pedicellariae (possibly of echinoid origin) in a recent study of acid-digested limestones and marly-limestones from the Buchan Caves Limestone and Taravale Formation (Early Devonian) in the Buchan Bindi area of eastern Victoria (p. 28).

Bittner, A., 1892. Über echiniden des Tertiärs von Australien. *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften zu Wien (math. naturw. Classe)* 101(1): 331–371, pls 1–4.

Describes and figures *Coptechinus pulchellus* sp. nov. (p. 342, pl. 1/5); *Cyclaster lycoperdon* sp. nov. (p. 360, pl. 4/1–2); *Fibularia gregata* var. *orbiculus* var. nov. (p. 347, pl. 2/1); *Fibularia Tatei* sp. nov. (p. 348, pl. 2/3); ? *Psammechinus humilior* sp. nov. (p. 337, pl. 1/3), *Psammechinus woodsii* var. *fasciger* var. nov. (p. 336, pl. 1/2) and *Progonolampas novae-hollandiae* gen. et sp. nov. (p. 357, pl. 3/1). Erects new genus *Australanthus* for *Cassidulus longianus* (p. 350, pl. 3/2); uses *Euspatangus* [nom. van.] for *Eupatagus murrayensis* and *E. rotundus* (p. 365) and retains the genus *Sarsella* Pomel, 1883 for *Lovenia Forbesi* (p. 364). Erects new genus *Tristomanthus* for *Catopygus elegans* (p. 355, pl. 4/3); notes and figures *Coptechinus lineatus* (p. 338, pl. 1/4); *Fibularia gregata* (p. 347, pl. 2/2); *Hemistaster planedeclevis* (p. 366, pl. 2/4); *Holaster australiae* (p. 359, pl. 3/3), *Monostychia australis* and *M. elongata* (p. 345, pl. 2/5–9); *Paradoxechinus novus* (p. 344, pl. 4/4), *Psammechinus* cfr. *Woodsi* (p. 334, pl. 1/1) and *Salenia tertiaria* (p. 333, pl. 1/6–7); notes *Cardiaster tertarius* (p. 360); *Clypeaster gippslandicus* (p. 347) and *Echinolampas* cfr. *posterocrassa* (p. 356).

Blainville, H. M. D. de, 1825. OURSIN, *Echinus* (Actinozoaires). Pp. 59–98 (French) in F. G. Levault (ed.), *Dictionnaire des Sciences Naturelles suivi d'une biographie des plus célèbres Naturalistes par plusieurs Professeurs du Jardin du Roi, et des principales École de Paris* 37.

Describes *Echinus* [= *Echinometra*] *mathaei* sp. nov. (p. 94), an extant species subsequently recorded as a fossil in the Tamara Limestone (Late Pleistocene) at Cape Burney, Western Australia (McNamara, 1992).

Bock, P. E. and Glenie, R. C., 1966. Late Cretaceous and Tertiary depositional cycles in south-western Victoria. *Proceedings of the Royal Society of Victoria* 79(1): 153–163 + fig. 1.

Table of diagnostic features of the major stratigraphic units lists echinoids as part of the fossil fauna of the Port Campbell Limestone and Clifton Formation (p. 155 – fig. 2). Also refers to echinoids as part of the macro-



- fauna of the Port Campbell Limestone in description of depositional Cycle 4 (p. 161).
- Bolger, P., 1988. Western District: Geelong-Brisbane Ranges. Pp. 109–118 in I. Clark, B. Cook and G. C. Cochran (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).
- Notes occurrence of echinoids in the Lower and Upper Maude Limestones (p. 116); Batesford Limestone (p. 117); Fyansford Formation (p. 118).
- Bowler, J. M., 1963. Tertiary stratigraphy and sedimentation in the Geelong-Maude area, Victoria. *Proceedings of the Royal Society of Victoria* 76(1): 69–137, pls 15–18.
- Refers to the abundance of the small echinoid *Fibularia* in the Lower Maude Limestone at the Maude school section (p. 75); notes the lithology of the Batesford Limestone consists of accumulated skeletal fragments of polyzoa, echinoids, pelecypods, foraminifera and other organisms (p. 91).
- Brighton, A. G., 1929. Tertiary irregular echinoids from the Chatham Islands, New Zealand. *Transactions and Proceedings of the New Zealand Institute* 60(2): 308–319, pl. 30.
- Remarks on '*Cardiaster*' *tertiarius* Gregory, 1890 (pp. 315, 317–318) and figures part of plate structure (p. 318, text fig. 18/a–b) [Note: Paper describes and figures *Apatopygus* aff. *recens* (Milne Edwards), p. 308, pl. 30/1–5, text figs 1–7, a fossil from the north end of Red Bluff, 6 miles N. of Waitangi (Te Wanga Series). A Late Oligocene age is suggested for this Series (p. 318). [It has not been compared with the Australian species *A. vincentinus*.]
- Brighton, A. G., 1930. A Tertiary irregular echinoid from the Chatham Islands, New Zealand. *Transactions and Proceedings of the New Zealand Institute* 60(4): 565–570.
- Compares a single specimen of *Echinolampas* from the Chatham Islands with Australian species of the genus and notes likeness to *E. posterocrassa* (p. 569).
- Brown, G. M. and Stephenson, A. E., 1991. Geology of the Murray Basin southeastern Australia. *Bureau of Mineral Resources, Geology and Geophysics, Bulletin* 235: 1–430.
- Contains numerous general references to the presence of echinoids in the various formations and members within the Murray Basin, including some figures showing the predominance of various 'fossil types' based on the number of recorded genera present (p. 127, fig. 66; p. 130, fig. 69, p. 135, fig. 72; p. 140, fig. 76). Also contains an extensive list of references. Appendix 6, lists macrofossils by generic name under 'type' and stratigraphic unit (pp. 426–430). [Note: lists are far from complete and contain many errors, including generic names no longer associated with Australian fossil echinoid species.]
- Brown, H. Y. L., 1910. *Report on the geology of the country South and East of the Murray river: with special reference to the subterranean water supply in wells and bores along the Pinnaroo and Bordertown railways*. Government Printer: Adelaide. 7 pp. + fold. map.
- Lists *Fibularia gregata*, *Scutella patella*, *Lovenia forbesi*, as characteristic Eocene fossils (p. 4).
- Brown, I. A., 1964. A new cystoid (Pelmatzoa, Echinodermata) from the Silurian of New South Wales. *The Proceedings of the Linnean Society of New South Wales for the year 1963*, 88(3): 386–391, pl. 21.
- Raises doubts about the determination by Mitchell (1897) of a fragment of an echinoderm from Bowning, N.S.W., described as *Palaechinus* sp. Considers the specimen [figured] could be portion of a cystoid such as *Holocystites* (*Megacystites*) *cylindricus* (Hall) from the Silurian of North America (pp. 386–387, pl. 21/D).
- Brown, I. A., 1967. A Devonian echinoid from Taemas, south of Yass, N.S.W. *Proceedings of the Linnean Society of New South Wales* 92(2): 157–161, pl. 4.
- Describes and figures *Cavanechinus warreni* gen. et sp. nov., from the Cavan Bluff Limestone, Murrumbidgee Series (Middle Devonian), near Taemas Bridge, Burrenjack Dam, south of Yass, New South Wales (p. 160, pl. 4/15).
- Brunnschweiler, R. O., 1956, [Identification of fossils]. Pp. 1–86 in M. A. Condon, D. Johnstone, C. E. Pritchard, and M. H. Johnstone, *The Giralia and Marrilla anticlines, North West Division, Western Australia*. *Bulletin of the Bureau of Mineral Resources, Geology and Geophysics* 25.
- Lists echinoids from Wadera Calcarenite (p. 32), Pirie Calcarenite (p. 37), Cashin Calcarenite (p. 40). Also notes echinoids found in Jubilee Calcarenite, Giralia Calcarenite, Mandu Calcarenite, Tulki Limestone and Pleistocene marine marls and muds.
- Brunnschweiler, R. O., 1961. On echinoids in the Tertiary of Western Australia with a description of two new Eocene Fibulariidae. *Journal of the Geological Society of Australia* 8(2): 159–169.
- Describes and figures *Cyamida paucipora* sp. nov. (p. 162, text fig. 1); *Lenicyamida compta* gen. et sp. nov. (p. 165, text figs 2–3); both from Merlingleigh Sandstone, North West Division, W.A. Places *Conoclypus westraliensis* Crespin, 1943, in the genus *Hypoclypus* [now regarded by Kier (1966) as a junior synonym of *Echinolampas*]. Refer Philip (1966) for comment on the genus *Lenicyamida*.
- Carmichael, E., 1976. Southern area. Pp. 38–50 in D. Corbett (ed.), *A Field Guide to the Geology of Yorke Peninsula*. Field Geology Club of South Australia Inc: Adelaide.
- Notes echinoderms including "small specimens of two species of the heart urchin *Lovenia*" on the foreshore beach at Stansbury (p. 43).
- Carmichael, E., 1986. Maslin Bay to Snapper Point. Pp. 35–48 in P. Hasenohr and D. Corbett (eds), *A Field Guide to the Coastal Geology of Fleurieu Peninsula*. The Field Geology Club of South Australia Inc: Adelaide.
- Notes abundant remains of fossil Echinodermata (sea urchins, starfish etc.) to be found at Maslin Beach; illustrates *Echinolampas posterocrassus* (p. 43).
- Carroll, D., 1949. Mineralogy of the Cheltenhamian beds at Beaumaris, Victoria. *Journal of Sedimentary Petrology* 19(3): 104–111.
- Notes large numbers of *Lovenia forbesi* occur at certain horizons in the lower part of the ferruginous beds (p. 105). [Note *Lovenia* species present is *L. woodsii* not *L. forbesi*]
- Carter, A. N., 1963. Appendix 4 - The identity and age of the Portland *Lovenia*. P. 166, pl. 27 in N. Boutakoff, The Geology and geomorphology of the Portland Area. *Memoirs of the Geological Survey of Victoria* 22.
- Compares *Lovenia woodsii* from Portland with topotype from Beaumaris and specimens from Peterborough, Victoria. Figures both *L. forbesi* and *L. woodsii* (pl. 27).
- Carter A. N., 1985. A model of depositional sequences in the late Tertiary of southeastern Australia. Pp. 13–27 in J. M. Lindsay, (ed.), *Stratigraphy, palaeontology, malacology: papers in honour of Dr Nell Ludbrook*. *Department of Mines and Energy, South Australia, Special publication* 5.
- Notes occurrence of '*Arachnoides*' *incisa* between Metung and Swan Reach and mollusc and echinoid fauna in shallow quarry (bed overlying Barnsdale Limestone) at Bellevue, near Bairnsdale (p. 16); *Lovenia woodsii* and '*Arachnoides*' *incisa* at Beaumaris (p. 17).
- Chapman, F., 1907. Newer Silurian fossils of eastern Victoria, Part 1. *Department of Mines, Records of the Geological Survey of Victoria* 2(1): 67–80, pls 1–7.
- Refers echinoid spines, found in the Tyers River Limestone (Silurian), Victoria, to the genus (?) *Palaechinus* (Scouler) McCoy (p. 77, pls 4/9, 7/16). Also refers to a single interambulacral plate in the Melbourne National Museum [Museum of Victoria] collection, from Springfield, Victoria, having been generically determined by McCoy as *Palaechinus* (p. 77). [Note: Philip (1962) states that Chapman's specimens could not be found, consequently, based solely on the photographs, the presence of ? *Palaechinus* spines is queried.]
- Chapman, F., 1908. New or little known Victorian fossils in the National Museum. Part 9: some Tertiary species. *Proceedings of the Royal Society of Victoria* 20(2): 208–221, pls 17–19.
- Comments on 6 specimens of *Studeria elegans* (Laube, 1869) from Spring Creek, Torquay, and also notes their occurrence from near the mouth of the Glenelg River and at Apsley, Victoria (p. 214); notes and figures *Linthia antiaustralis* Tate, 1885, from Curlewis (p. 215, pl. 19/1–3), notes *Marelia anomala* Duncan, 1877, from Beaumaris (p. 216); and *Eupatagus rotundus* Duncan, 1877, from Muddy Creek (p. 217).
- Chapman, F., 1910. A study of the Batesford Limestone. *Proceedings of the Royal Society of Victoria* 22(2): 263–314, pls 52–55.
- Refers to *Echinoneus* (p. 301), but does not include it in the faunal schedule of echinodermata (p. 305); comments on the genus *Linthia* (p. 309).



- Chapman, F., 1912. Notes on a collection of Tertiary limestones and their fossil contents, from King Island. *Memoirs of the National Museum of Melbourne* 4: 39–53, pls 6–7.
- Notes *Cidaris* (*Leiocidaris*) cf. *australiae* Duncan (p. 44) and spines of echinoids (p. 45, pl. 7/5a) from limestone outcropping at Seal River in the extreme S.E. of the island.
- Chapman, F., 1913. Description of new and rare fossils obtained by deep boring in the Mallee. Part 1: Plantae; and Rhizopoda to Brachiopoda. *Proceedings of the Royal Society of Victoria* 26(1): 165–191, pls 16–19.
- Notes and figures *Goniocidaris* sp. spine (p. 181, pl. 18/22) and *Echinocyamus* (*Scutellina*) *patella* Tate (p. 181, pl. 18/23). [Note: latter figure shows a marsupium!].
- Chapman, F., 1914a. On the succession and homotaxial relationships of the Australian Cainozoic system. *Memoirs of the National Museum of Melbourne* 5: 5–52.
- Notes the significance of some cosmopolitan and widely distributed fossil echinoids (pp. 16–17) with specific reference to Victorian echinoids at Flinders (p. 33), Bairnsdale (p. 35), Corio Bay (p. 36) and in pink limestone at Grangeburn, near Hamilton (pp. 43, 47).
- Chapman, F., 1914b. *Australasian Fossils*. George Robertson and Co., Melbourne and London. 341 pp.
- Includes generalised summary of the Echinoidea (pp. 143–151) and figures *Linthia antiaustralis* Tate (text fig. 28, p. 60); *Cidaris* (*Leiocidaris*) *australiae* Duncan, *Psammechinus woodsi* Laube, *Fibularia gregata* Tate, *Echinocyamus* (*Scutellina*) *patella* Tate, *Clypeaster gippslandicus* McCoy and *Studeria elegans* Laube (text fig. 80A–F, p. 145); *Hemaster planedectivis* Gregory, *Schizaster spheonoides* T. S. Hall and *Lovenia forbesi* Tenison Woods (text fig. 81A–C, p. 147).
- Chapman, F., 1915. Appendix 2. Report on a collection of fossils made by Dr A. Wade from the Cainozoic series of South Australia. Pp. 44–50 in A. Wade, The supposed oil-bearing areas of South Australia. *Geological Survey of South Australia Bulletin* 4.
- Lists fossils from four localities including echinoids from Hildersheim, near Mannum, North West Bend of Murray River, South Australia (p. 44), and Kingscote, Kangaroo Island (pp. 46–47).
- Chapman, F., 1916a. On some smaller fossils from the red limestone of Grange Burn, near Hamilton, with a note on a new species of *Bolivina*. *The Victorian Naturalist* 32: 144–146.
- Notes presence of Janjukian forms such as *Linthia mooraboolensis* (p. 144); also spines of a cidaroid indet. (p. 145).
- Chapman, F., 1916b. Cainozoic geology of the Mallee and other Victorian bores. *Records of the Geological Survey of Victoria* 3(4): 327–430, pls 63–78.
- Notes large number of moderate sized fossil shells including the echinoids *Scutellina* and *Psammechinus* were obtained from the bores in perfect condition (p. 328). Records numerous occurrences of echinoids in details of Mallee bores 1–11 (pp. 331–375) and lists species found as *Cidaris* sp., *Goniocidaris* sp., *Paradoxechinus novus*, *Psammechinus woodsi*, *Echinocyamus* (*Scutellina*) *patella*, *Fibularia gregata*, *Clypeaster gippslandicus*, *Arachnoides* (*Monostychia*) *australis*, *Echinoneus dennanti*, *Linthia* sp., *Lovenia forbesi* and echinoid test fragments and spines, indet. (p. 377). Notes *Echinocyamus* (*Scutellina*) *patella* and *Echinoneus dennanti* as noteworthy “Janjukian” species found in the borings (p. 386). Records *Arachnoides* (*Monostychia*) cf. *australis* from bore at Maryvale, 12 miles from Goroce, Victoria (p. 394), *Lovenia forbesi* from Nhill No. 51 bore (p. 395); *Fibularia gregata* Tate, *Scutella marsupiatata* sp. nov. [nomen nudum] – probably = *Echinocyamus* (*Scutellina*) *patella* Tate sp., marsupiate variety, and *Echinolampas murrayanus* Laube from Croydon bore, 3.5 miles from Adelaide (fossils listed by Prof. Tate), p. 399, and *Lovenia woodsi* from the Portland Bore (p. 401). Figures *Goniocidaris* sp. spine (pl. 65/22) and *Echinocyamus* (*Scutellina*) *patella* Tate sp. showing marsupiate (pl. 65/23).
- Chapman, F., 1920. Notes on a collection of Tertiary fossils from Ooldea and Watson, South Australia. *Proceedings of the Royal Society of Victoria* 32(2): 225–245.
- Records a fragmentary test of ? *Laganurn* sp. from near Ooldea on the Trans Australia Railway line, Nullarbor Plain, S.A. (pp. 234, 243).
- Chapman, F., 1921. Report of an examination of material obtained from a bore at Torquay. *Records of the Geological Survey of Victoria* 4(3): 315–324, pl. 51.
- Records echinoid spines and plates at various levels in a 70 feet deep bore near Bird Rock, Torquay (pp. 318–319). Schedule of fossils (pp. 322–324).
- Chapman, F., 1923. On a cast of a fossil sea-urchin from the red sands of Studley Park, Kew. *The Victorian Naturalist* 39, 158–159, pl. 4.
- Refers to a fossil considered cf. *Lovenia* of Kalimnan age [Note: Philip (1963) refers to this as a pebble!].
- Chapman, F., 1926. Geological notes on Neumerella and the section from Bairnsdale to Orbost. *Proceedings of the Royal Society of Victoria* 38: 125–142, pl. 10.
- Schedules fossils collected at Neumerella [near Orbost] including the echinoids *Cidaris* (*Leiocidaris*) *australiae* Duncan, *Paradoxechinus novus* Laube, *Clypeaster gippslandicus* McCoy, *Arachnoides* (*Monostychia*) *australis* Laube, A. (M.), *australis* var. *elongata* Duncan, *Eupatagus murrayensis* Laube (p. 130). Refers also to echinoids in text (p. 127).
- Chapman, F., 1928. The Sorrento Bore, Mornington Peninsula, with description of new or little-known fossils. *Records of the Geological Survey of Victoria* 5(1): 1–195, pls 1–12.
- Describes bore cores and contents (pp. 7–86); lists echinoids, including *Goniocidaris prunispinosa*, *G. pentaspinosa* and *Echinocyamus* (*Scutellina*) *patella*, and records depths at which they were found (p. 146); notes Echinodermata present and gives stratigraphic horizons (p. 175); lists new species [refer Chapman, F. and Cudmore, F. A., 1928, for description], p. 183.
- Chapman, F., 1934. *The Book of Fossils*. Shakespeare Head Press Ltd: Sydney. 126 pp.
- Brief reference to Australian “Sea-urchins” (pp. 102–103); figure of *Lovenia forbesi* (fig. 37C).
- Chapman, F. and Crespin, I., 1926. Preliminary notes on the fauna and age of the Plantagenet Beds of Western Australia. Pp. 319–322 in L. K. Ward (ed.), *Report of the seventeenth meeting of the Australian Association for the Advancement of Science. Australia and New Zealand. Adelaide meeting, August, 1924*.
- Refers to *Linthia compressa* McCoy sp. at Cape Riche (p. 321) and notes it a restricted form typical of the Janjukian (p. 322). [Refer also Chapman and Crespin, 1934].
- Chapman, F. and Crespin, I., 1934. The palaeontology of the Plantagenet Beds of Western Australia. *Journal of the Royal Society of Western Australia* 20: 103–136.
- Includes four echinoid genera (two each from Albany and Cape Riche) in the list of fossils from the Plantagenet series (p. 126).
- Chapman, F. and Crespin, I., 1935. The sequence and age of the Tertiaries of southern Australia. Pp. 118–126 in G. W. Leeper (ed.), *Report of the twenty-second meeting of the Australian and New Zealand Association for the Advancement of Science. Melbourne meeting, January 1935*.
- Refers to *Eupatagus rotundus* and *Linthia mooraboolensis* from Grange Burn, near Hamilton, Victoria (p. 124); *Fibularia gregata* from Troubridge Hill and *Echinolampas 'gambierensis'* from Kingscote, South Australia (p. 125). [Note: contains useful references to numerous Tertiary localities.]
- Chapman, F. and Cudmore, F. A., 1928. Phylum Echinodermata, Class Echinoidea. In F. Chapman and I. Crespin, Description of new or rare species, in F. Chapman, The Sorrento Bore, Mornington Peninsula, with description of new or little-known fossils. *Records of the Geological Survey of Victoria* 5(1): 90–92, pls 11/73a–1, 74a–g.
- Describes and figures *Goniocidaris prunispinosa* sp. nov. (p. 90, pl. 11/73a–1) and *G. pentaspinosa* sp. nov. (p. 91, pl. 11/74a–g).
- Chapman, F. and Cudmore, F. A., 1934. The Cainozoic Cidaridae of Australia. *Memoirs of the National Museum of Melbourne* 8: 126–149, pls 12–15.
- Describes and figures *Phyllacanthus duncani* sp. nov. (p. 131, pls 12/7–9, 15/33), *Prionocidaris scoparia* sp. nov. (p. 134, pls 12/10–11, 15/28–30); *Goniocidaris murrayensis* sp. nov. (p. 138, pl. 14/20–22); *G. mortenseni* sp. nov. (p. 139, pls 14/23, 27); *Chondrocidaris clarkii* sp. nov. (p. 141, pls 13/15–17, 15/31); club shaped spines, *incertae sedis* (p. 142, pls 14/25, 26a–b) and smooth spines, *incertae sedis* (p. 142, pl. 14/24). Notes and figures *Stereocidaris australiae* (Duncan), p. 127, pls 12/1–6b, 15/32a, 34–36c; *Goniocidaris prunispinosa* Chapman and Cudmore, 1928 (p. 135, pl. 13/12–14) and *G. pentaspinosa* Chapman and Cudmore, 1928 (p. 137, pl. 14/18–19).
- Clarke, E. de C., Teichert, C. and McWhae, J. R. H., 1948. Tertiary deposits near Norseman, Western Australia. *Journal of the Royal Society of Western Australia* 32 [1945–1946]: 85–103.



- Notes 'Echinii' recorded by W. P. Campbell (1906), p. 88. Refers to *Cidaris* spines from near Norseman end of causeway over Lake Cowan (p. 91), and from outcrops on bed of Lake Cowan (p. 96). Also notes I. Crespin suggests possible correlation of Norseman beds with Balcombian deposits in Victoria and South Australia (p. 99).
- Clark, E. V., 1900. Geological notes on the cliffs separating Aldinga and Myponga Bays. *Transactions and Proceedings and Report of the Royal Society of South Australia* 24(1): 1–5.  
Lists 6 echinoids identified in 'Eocene' beds south of Port Willunga jetty (p. 5).
- Clark, H. L., 1938. Echinoderms from Australia. *Memoirs of the Museum of Comparative Zoology* 55: viii + 597, 28 pls  
Describes and figures *Hesperaster crassus* sp. nov. (pp. 413–414, text fig 35A)-an extant species [= *Ammotrochus crassus*] recorded from the Quaternary of Rottnest Island, W.A.; *Echinocyamus planissimus* sp. nov. (pp. 422–423, pl. 27/5–8)-an extant species found in Pliocene to Recent sediments in the Perth Basin, W.A. (McNamara, 1990) Also comments on *Peronella orbicularis* Leske (p. 418); *Protenaster australis* Grey (p. 429)
- Clark, H. L., 1946. The echinoderm fauna of Australia, its composition and its origin. *Carnegie Institution of Washington, Publication* 566, 567 pp. [Echinoidea, 277–382].  
Details fossil and extant Echinoidea known at the time (pp. 277–382) with synonymy, background information and some description [contains a few anomalies such as listing *Lovenia forbesi* but not *L. woodsi*]. Places *Echinobrissus australiae* Duncan, 1877, and *E. vincentinus* Tate, 1891, in the genus *Nucleolites*. Includes a very comprehensive bibliography (pp. 499–522)
- Cockbain, A. E., 1968. The stratigraphy of the Plantagenet Group, Western Australia. *Geological Survey of Western Australia, Annual Report for the year 1967*: 61–63, pls 42–43.  
Notes the benthonic foraminifers and echinoids of the Nanarup Limestone Member of the Werillup Formation are recorded by Quilty [in Hodgson, E. A. et al., 1963. The geology of the south coast in the vicinity of Cheyne Bay, W. A. - an unpublished Western Australia University thesis]
- Colliver, F. S., 1936. Fossil localities in and about Melbourne: Part 1 -Royal Park cutting. *The Victorian Naturalist* 53(7): 131–132.  
Notes *Psammechinus woodsi* Laube and cidaroid plates and spines occur in the lower beds of the railway cutting at Royal Park (p. 132)
- Colliver, F. S., 1937. Fossil localities in and about Melbourne: Part 2 -Beaumaris. *The Victorian Naturalist* 53(9): 151–153.  
Notes the presence of the echinoid *Lovenia forbesi* (pp. 151, 153) Also notes *Clypeaster gippslandicus* McCoy (p. 151) and *Monostychia australis* Laube (pp. 151, 153). [Note. *Lovenia* species present is *L. woodsi* not *L. forbesi*.]
- Cooper, B. J., 1979. Eocene to Miocene stratigraphy of the Willunga Embayment. *Department of Mines and Energy, Geological Survey of South Australia Report of Investigations* 50: 1–101.  
Refers to echinoids in the Tortachilla Limestone (p. 18) and Port Willunga Formation (p. 22); echinoid spines in the Blanche Point Formation (p. 18).
- Cooper, B. J., 1985. The Cainozoic St Vincent Basin - tectonics, structure, stratigraphy. Pp. 35–49 in J. M. Lindsay (ed.), *Stratigraphy, palaeontology, malacology: papers in honour of Dr Nell Ludbrook. Department of Mines and Energy, South Australia, Special Publication 5*  
Notes that Philip and Foster (1971) recorded nine of only eleven known species of marsupiate echinoids as occurring in the Port Willunga Formation and its nearby equivalents (p. 43).
- Corbett, D., 1976. Northern area. Pp. 23–27 in D. Corbett (ed.), *A Field Guide to the Geology of Yorke Peninsula*. Field Geology Club of South Australia Inc: Adelaide.  
Records spines and broken skeletons of echinoids etc., in cliffs 1.5 km. north of Point Riley, near Wallaroo, South Australia (p. 23).
- Cotteau, G., 1889. Échinides nouveaux ou per connus (8th. article). *Mémoires de la Société Zoologique de France* 2(2): 321–332, pls 14–15 (French).  
Describes and figures *Gualteria australiae* sp. nov. (p. 328, pl. 15/4–5) and *Cyclaster morgani* sp. nov. (p. 330, pl. 15/6–10), both from Mount Gambier.
- Cotteau, G., 1890. Échinides nouveaux ou per connus (9th. article). *Mémoires de la Société Zoologique de France* 3(5): 537–550, pls 11 and 12 (French).  
Describes and figures *Echinolampas morgani* sp. nov. (p. 546, pls 12/13–15) and *Galeraster australiae* (p. 548, pl. 12/16–18), both from Mount Gambier.
- Cotteau, G., 1891. Échinides nouveaux ou per connus (10th. article). *Mémoires de la Société Zoologique de France* 4(5): 620–633, pls 18–19 (French).  
Describes and figures *Scutellina morgani* sp. nov. from Mount Gambier (p. 629, pl. 19/10–14).
- Crawford, A. R., 1965. The geology of Yorke Peninsula. *Geological Survey of South Australia Bulletin* 39: 1–96, pls 1–54 + maps.  
Refers to Tepper (1879) recording *Fibularia gregata* Tate in a white plastic sandy clay at Mulloowurtie Point (p. 33)
- Crespin, I., 1926. The geology of Green Gully, Keilor, with special reference to the fossiliferous beds. *Proceedings of the Royal Society of Victoria* 38: 100–124, pls 7–9.  
Includes in schedule of fossils from 'Janjukian', *Echinus* (*Psammechinus*) *woodsi* Laube var. *humilor* Bittner and Cidaroid plates and spines indet. (p. 109); notes *E. (P.) woodsi* var. *humilor* under description of the more important fossils present (p. 117) and makes minor text references to echinoids (pp. 104, 122).
- Crespin, I., 1943a. The occurrence of the genus *Conoclypus* in the North-West Division, Western Australia. *Journal of the Royal Society of Western Australia* 28: 75–77.  
Describes and figures *Conoclypus westraliensis* sp. nov.
- Crespin, I., 1943b. The stratigraphy of the Tertiary marine rocks in Gippsland, Victoria. *Commonwealth of Australia, Department of Supply and Shipping Mineral Resources Survey, Palaeontological Bulletin* 4: 1–101 + forward, 8 figures, 5 tables.  
Includes numerous references to echinoids, in particular regular forms, from various stratigraphic horizons and localities in East Gippsland (pp. 5, 17, 18, 19, 21–26, 29, 38, 41, 45, 51, 56, 63–64, 68, 85 [schedule], and table 1). Of particular note is the record of *Arachnoides* (*Monostychia*) *australis*, from Le Grand's quarry, south of Longford (p. 51)
- Crespin, I., 1944. Middle Miocene limestones from King Island, Tasmania. *Papers and Proceedings of the Royal Society of Tasmania* 13: 15–18.  
Records *Fibularia gregata* and club-shaped cidaroid spines from a well, 3 1/2 miles from Mrs A. J. Adam's property and also spines in underlying 14 feet of overburden (p. 16). Considers *F. gregata* typically Balcombian (p. 17).
- Daily, B., Milnes, A. R., Twidale, C. R. and Bourne, J. A., 1979. Geology and geomorphology. Pp. 1–38 in M. J. Tyler, C. R. Twidale and J. K. Ling (eds), *Natural History of Kangaroo Island*. Royal Society of South Australia Inc.  
Notes *Australanthus longianus* occurring at Kingscote in bryozoal limestones rich in echinoderms (p. 29, fig. 32a, b) [Other sections of the book refer to extant echinoids]
- David, T. W. E., 1950. *The geology of the Commonwealth of Australia* (W. R. Brown ed.). Edward Arnold and Co., London, Volume 1, xx + 747 pp., 58 pls, 28 tables [also includes 209 text figures some on unnumbered pages].  
Refers to *Cidaris*, *Micraster*, *Holaster*, from Gingin (pp. 494–495), *Schizaster* sp., from Pebble Point near Princetown (p. 524), *Fibularia gregata*, from Maude (p. 525); *Clypeaster gippslandicus*, from North Geelong, *Lovenia forbesi*, from Beaumaris (p. 528); *Clypeaster gippslandicus*, from Baimsdale (p. 529), *Lovenia forbesi*, from Blanchetown (p. 533), *Fibularia gregata*, *Scutellina patella*, *Paradoxechinus novus*, from Troubridge Hill (p. 534), *Cassidulus longianus*, *Echinolampas gambierensis*, from Kingscote; *Fibularia gregata*, from Edithburgh (p. 535); *Lovenia forbesi*, from Cape Grim and Table Cape (p. 537); *Cidaris* cf. *australiae*, from Seal River, King Island; *Echinus woodsi*, *Cidaris australiae*, *Salenia tertaria*, from Wilson's Bluff, Nullarbor (pp. 538–539), abundant echinoids from the Albany-Norseman area, W. A. (p. 539); Echinoid plates and spines from Giralda Range (p. 541). Under "Great Artesian Basin Regional Geology", the echinoid '*Micraster*' is listed from the Roma Series (p. 487) Figures *Lovenia forbesi* from Beaumaris (pl. 48e). [Note. *Lovenia* species from Beaumaris is *L. woodsi* not *L. forbesi*]
- Davies, A. M., 1934. *Tertiary Faunas - A text-book for oilfield palaeontologists and students of geology. Volume 2 - The sequence of Tertiary faunas* (first edition). Thomas Murby and Co., London, x + 252 pp.  
Refers to several echinoid genera in the South Australian Miocene fauna (p. 177). [Note. information repeated in Davies, A. M., 1975]



- Davies, A. M., 1935. *Tertiary Faunas - A text book for oilfield palaeontologists and students of geology. Volume 1 - The composition of Tertiary faunas* (first edition). Thomas Murby and Co., London, xi + 406 pp.
- Includes a chapter (pp. 64–115) on world wide Tertiary Echinoidea in which 104 genera are listed with brief descriptions and distribution (including occurrences in S. Australia). Figures and refers to *Duncanaster australiae* (Duncan), p. 96 fig. 150a,e, p. 98; *Lovenia forbesi* (T. Woods), p. 106 – fig. 162a, p. 109. [Note: figured specimen of *L. forbesi* is clearly *L. woodsii*]. Refer also second edition, Davies, A. M., 1971.
- Davies, A. M., 1971. *Tertiary Faunas: A text-book for oilfield palaeontologists and students of geology. Volume 1 - The composition of Tertiary faunas* (second edition, revised and brought up to date by F. E. Eames). George Allen and Unwin, London, 571pp.
- Includes chapter (pp. 100–168) on world wide Tertiary Echinoidea with brief description and notes on distribution (including occurrences in Australia). Figures *Galeraster australiae* Cotteau (p. 117, fig. 287b,d); *Duncanaster australiae* (Duncan), p. 143 – fig. 349a–b; *Notolampas flocculus* Philip (p. 160 fig. 391a–b,d); *Pisolampas concinna* Philip (p. 160 – fig. 392a–b,d). [Note: revision of text published in Davies, 1935]
- Davies, A. M., 1975. *Tertiary Faunas: A text-book for oilfield palaeontologists and students of geology. Volume 2 The sequence of Tertiary faunas* (second edition, revised and brought up to date by F.E. Eames and R. J. G. Savage). George Allen and Unwin, London, 447 pp.
- Refers to several echinoid genera in the South Australian Miocene (p. 259) [Note: repeat of information published in Davies, 1934]
- Dennant, J., 1890. Observations on the Tertiary and post-Tertiary geology of south-western Victoria. Pp. 441–452 in W. Baldwin Spencer (ed.), *Report of the second meeting of the Australian Association for the Advancement of Science* (Melbourne, January 1890).
- Lists fossils, including several echinoids, from Grange Burn near Hamilton, Dry Creek north of Nelson, Crawford River; Border quarries near Apsley (pp. 442–443). Also refers to *Hemaster forbesii* at Portland (p. 445).
- Dennant, J., 1891a. Notes on Miocene strata at Jemmy's Point with brief remarks upon the older Tertiaries at Bairnsdale. *Proceedings of the Royal Society of Victoria* 3: 53–66.
- Lists *Arachnoides* sp. (p. 61) and notes *Clypeaster gippslandicus* among fossils collected on the banks of the Mitchell River (p. 65).
- Dennant, J., 1891b. Appendix to remarks on "The Tertiary strata of Bairnsdale". *Proceedings of the Royal Society of Victoria* 3: 67–69.
- Lists *Eupatagus* (? *murrayensis*) cast, *Echinolampas* sp., *Monostychia australis*, and *Leiocidaris australis* from bank of Mitchell River (Parish of Wuk Wuk), p. 68
- Dennant, J. and Clark, D., 1898. The Miocene strata of the Gippsland Lakes area. *Proceedings of the Royal Society of Victoria* 10(2): 129–139, pl. 7
- Lists fossils found in a road cutting at Swan Reach (incl. *Clypeaster gippslandicus*), p. 131; and from roadside near Nicholson River (incl. *Cidaris* sp. spines), p. 134. Additions and corrections to catalogue of fossils (Dennant 1891a) includes *Arachnoides incisus* Tate (p. 139)
- Dennant, J. and Clark, D., 1903. Geology of the valley of the Lower Mitchell River. *Proceedings of the Royal Society of Victoria* 16(1): 12–47, pls 2–7.
- Schedules fossils from various localities along the lower Mitchell River which include occasional references to echinoids, in particular "Bellevue" (*Lovenia forbesi*), p. 23, and "Skinner's and Drier's" (*Clypeaster gippslandicus*, *Eupatagus murrayensis*, *Monostychia australis* and *Echinolampas* sp.), p. 42.
- Dennant, J. and Kitson, A. E., 1903. Catalogue of the described fossils (except Bryozoa and Foraminifera) in the Cainozoic fauna of Victoria, South Australia and Tasmania. *Records of the Geological Survey of Victoria* 1 (2): preface + 89–147 and map.
- Includes a comprehensive bibliography (pp. 89–93), schedule of 'Eocene to Oligocene' echinoid distribution (pp. 130–132) and 'Miocene' echinoid distribution (p. 139)
- Dennant, J. and Mulder, J. F., 1898. The geology of the Lower Leigh Valley. *Proceedings of the Royal Society of Victoria* 11(1): 54–95, pls 5–6.
- Notes *Cidaris* sp. spines at Dog Island section of limestone (p. 64); lists 'Eocene' fossil echinoids collected, namely *Paradoxechinus novus*, *Schizaster abductus*, *Lovenia forbesi* and *Gonocidaris* sp. (p. 86); notes *Schizaster abductus* in a narrow gully close to the township of Shelford (p. 88).
- Duncan, P. M., 1864. A description of some fossil corals and echinoderms from the South Australian Tertiaries. *Annals and Magazine of Natural History* (3) 14(81): 161–168, pls 5–6.
- Describes and figures *Hemipatagus forbesi* Woods and Duncan [= *Lovenia*], p. 165, pl. 6/3a–d; refers to *Clypeaster folium* Agassiz, var. with a marginal periproct (not illustrated) from Muddy Creek [?], the Murray, South Australia (p. 166), and *Schizaster* in the Adelaide Tertiaries (p. 168). [Note: drawing (pl. 6/3a–d) is of *Lovenia woodsii* not *L. forbesii*]
- Duncan, P. M., 1870. On the fossil corals (Madreporaria) of the Australian Tertiary deposits. *Quarterly Journal of the Geological Society of London* 26(3): 284–318, pls 19–21.
- Notes the common echinoderm of the Tertiaries as *Hemipatagus Forbesii* Woods and Duncan (p. 285). In a review of the distribution of Tertiary fossiliferous deposits, refers to *Spatangus Forbesii* (*Hemipatagus Forbesii*) at Spring Creek (p. 290) and Curdie's Inlet (p. 294), Victoria
- Duncan, P. M., 1877. On the Echinodermata of the Australian Cainozoic (Tertiary) deposits. *Quarterly Journal of the Geological Society of London* 33(1): 42–73, pls 3–4.
- Schedule (p. 44) lists 24 species. Describes and figures *Leiocidaris australiae* sp. nov. (p. 45, pl. 3/1–2); *Temnechinus lineatus* sp. nov. (p. 46, pl. 3/3–5); *Arachnoides loveni* sp. nov. (p. 47, pl. 3/6–7); *Arachnoides elongatus* sp. nov. (p. 48, pl. 3/8); *Rhynchopygus dysasteroides* sp. nov. (p. 49, pl. 3/9–10); *Echinobrissus australiae* sp. nov. (p. 50, pl. 3/11); *Holaster australiae* sp. nov. (p. 51, pl. 3/12–13); *Mareia anomala* sp. nov. (p. 52, pl. 4/1–4); *Eupatagus rotundus* sp. nov. (p. 53, pl. 3/14–17); *Eupatagus laubei* sp. nov. (p. 55, pl. 3/18); *Megalaster compressus* gen. et sp. nov. (pp. 61–62, text fig. 1). Notes and figures *Lovenia forbesi* Woods and Duncan (p. 59, pl. 4/5–8), describes, but does not figure, *Lovenia forbesi* var. *minor* (p. 59); refers *Schizaster* from Adelaide district to *S. ventricosus* Gray, a recent form (pp. 61, 68) Notes *Echinanthus testudinarius* Gray (p. 46), *Arachnoides australis* Laube (p. 48) *Pygorhynchus vassali* Wright and *Catopygus elegans* Laube (p. 51). Schedule (pp. 62–63) lists Australian Tertiary and Recent echinoids; schedule (p. 63) lists species common to the Cainozoic (Tertiary) and Recent faunas. Remarks on species (pp. 64–68).
- Duncan, P. M., 1878. On the Salenidae, Wright - Part 3. On a third form of Recent Salenidae, and on the Salenidae from the Tertiary deposits. *Annals and Magazine of Natural History* (5) 2(7): 59–67.
- Includes lengthy discourse on *Salenia tertiaria* Tate, 1877 (p. 61)
- Duncan, P. M., 1887. A revision of the Echinoidea from the Australian Tertiaries. *Quarterly Journal of the Geological Society of London* 43: 411–430.
- Notes and lists 29 species and 2 varieties of Australian Tertiary echinoids with numerous comments and additional information gained since his 1877 paper. The following points are of special note: erection of a new genus *Ortholophus* in which *Temnechinus lineatus* Duncan 1877 is placed (pp. 413–415); *Clypeaster folium* still included as an Australian fossil echinoid in spite of it being referred to the genus *Monostychia* by Etheridge in 1875 (pp. 415–416); acceptance of *Clypeaster gippslandicus* McCoy, 1879, but relegation of *Monostychia* to a sub-genus of *Clypeaster* (pp. 416–420); figure of apical system of *Holaster australiae* (p. 421); renaming *Rhynchopygus dysasteroides* Duncan, 1877 *Holaster difficilis* (p. 421), retention of *Megalaster compressus* Duncan, 1877, although considered likely to be a *Pericosmus* (p. 422); and lengthy discussion about the authorship of *Lovenia forbesi* (pp. 424–426). [Note: Duncan uses Cotteau's nom. var. *Euspatangus* for *Eupatagus* in this paper].
- Duncan, P. M., 1889. A revision of the genera and great groups of the Echinoidea. *Journal of the Linnean Society of London (Zoology)* 23: 1–310.
- Revised classification and description of worldwide echinoid genera. Genera noted as found in Australia agrees with the list in Duncan (1887), with the exception of *Gonocidaris*, spines of which were previously noted from Cape Otway. Erects subgenus *Studeria* for *Catopygus elegans* Laube, 1869 (p. 185).
- Durham, J. W., 1955. Classification of clypeasteroid echinoids. *University of California Publications in Geological Sciences* 31(4): v + 73–198, (incl. 2 pls, 38 figs).
- Refers to genera etc. known to occur in the Australian fossil record as follows: under family Clypeasteridae, describes *Clypeaster* Lamarck (p. 118); under family Arachnoididae, describes *Fellaster* gen. nov. (p. 125), *Ammotrophus* H. L. Clark (p. 127), *Monostychia* Laube (p. 128), *Scutellinoides* gen. nov. (p. 128), *Fossulaster* Lambert and Thiéry (p. 129); under family Laganidae, describes *Sismondia* (p. 141). Figures *Sismondia*



- muravica* Tate (fig. 27e, p. 123); *Monostychia australis* Laube (fig. 29d, p. 126); *Fossulaster halli* Lambert and Thiéry (fig. 38, p. 181). Comments "It seems probable that arachnoidids older than *Monostychia*, *Fossulaster*, and *Scutellinoides* will be found" (p. 122). Notes *Hesperaster crassus* H. L. Clark occurs as a fossil ("Quaternary") at Rottneest Island, Western Australia (p. 128).
- Durham, J. W., Fell, H. B., Fischer, A. G., Kier, P. M., Melville, R. V., Pawson, D. L., and Wagner, C. D., 1966. Echinoids. Pp. U211–U640 in R. C. Moore (ed.), *Treatise on Invertebrate Paleontology, Part U, Echinodermata* 3(1 and 2). The Geological Society of America Inc. and The University of Kansas Press.
- Includes details of echinoid genera (extinct and extant) from throughout the world, with brief descriptions, figures and information on type species, distribution and range. Figures the following Australian species: *Paradoxechinus novus* Laube, 1869 (U424, fig. 317/1a,b); *Monostychia australis* Laube, 1869 (U468, fig. 359/1a,b); *Scutellinoides patella* (Tate, 1891), U468, fig. 359/2a,b; *Fossulaster halli* Lambert and Thiéry, 1925 (U468, fig. 359/3a,b); *Lenicyamidia compta* Brunnschweiler, 1961 (U470, fig. 361/2a,b); *Australanthus longianus* (Gregory, 1890), U509, fig. 397/2a,b; *Duncaniaster australiae* (Duncan, 1877) [= *Corystus dysasteroides*], U529, fig. 416/a,b; *Pericosmus* (*Victoriaster*) *gigas* McCoy, 1882 (U568, fig. 452/2); *Protenaster australis* (Grey, 1851), U578, fig. 461/2a–c; *Gillechinus cudmorei* Fell, 1964 (U592, fig. 476/1a–c); *Pisolampas concinna* Philip, 1963 (U630, fig. 516/1a–c); *Notolampas flosculus* Philip, 1963 (U630, fig. 516/2a–d).
- Etheridge, R., 1875. Description of a new species of the genus *Hemipatagus*, Desor, from the Tertiary rocks of Victoria, Australia, with notes on some previously described species from South Australia. *Quarterly Journal of the Geological Society of London* 31(2): 444–450, pl. 21.
- Describes and figures *Hemipatagus woodsii* sp. nov. (p. 445, pl. 21/1–7); figures lateral view of *H. Forbesii* (pl. 21/8); notes and figures *Psammechinus woodsii* Laube (p. 447, pl. 21/10), *Micraster brevistella* Laube (p. 447, text figs 11–12); notes *Monostychia australis* Laube and *Clypeaster folium* Duncan (non Agassiz) are one and the same (p. 448), and gives synonymy of other recorded Australian Tertiary echinoids (pp. 449–450).
- Etheridge, R., 1878. *A catalogue of Australian fossils*. University Press : Cambridge. 232 pp.
- Echinodermata (Tertiary)" lists each genus and species recorded at the time, as well as related stratigraphic subdivision, references and localities etc. (pp. 138–143).
- Etheridge, R., 1892a. A monograph of the Carboniferous and Permo–Carboniferous Invertebra of New South Wales. Part 2 - Echinodermata, Annelida, and Crustacea, II - Description of the genera and species. *Department of Mines, Memoirs of the Geological Survey of New South Wales. Palaeontology* 5(1): ix + 65–131, index, pls 12–22.
- Describes and figures *Archaeocidaris* ? *selwyni* sp. nov. from the Upper Marine Series [Permian], Shoalhaven River, Nowra, N.S.W. (p. 67, pl. 15/1–3); *Archaeocidaris* sp. ind., also from the Upper Marine Series, at a quarry, south of West Maitland, N.S.W. (p. 69, pl. 22/1). Also records a few fragments of spines and a single plate from the Rockhampton district of Queensland which are attributed to the Suborder Perischoechimida (p. 67). [Note: Jackson (1912) considers the difference between the two specimens of *Archaeocidaris* to be simply a matter of age, rather than species].
- Etheridge, R., 1892b. [Description of *Micraster sweeti* sp. nov.]. Pp. 559–560 in R. L. Jack and R. Etheridge, *The geology and palaeontology of Queensland and New Guinea* (2 vols). Government Printer, Brisbane (Dulau and Co., London).
- Describes, but does not figure, *Micraster sweeti* sp. nov. from a Cretaceous bed in Corporation Quarry, Maryborough, Queensland.
- Etheridge, R., 1913. The Cretaceous fossils of the Gingin chalk. *Palaeontological contributions to the geology of Western Australia* 4, *Western Australia Geological Survey Bulletin* 55: 9–34, pls 1–4.
- Notes and figures echinoid spines (pp. 11–12, pl. 1/9–15).
- Etheridge, R. and Murray, R. A. F., 1875. Report on the geology of the country intersected by the Durham Lead. Pp. 101–118 in R. Brough Smyth, *Geological Survey of Victoria, Report of Progress* 2.
- Notes "Spines and remains of echinoderms (*Spatangus* etc.)..." in the vicinity of Reid's Creek and Dog Island (p. 104).
- Fell, H. B., 1949. An echinoid from the Tertiary (Janjukian) of South Australia, *Brochopleurus australiae* sp. nov. *Memoirs of the National Museum of Melbourne* 16: 17–19, pl. 1.
- Describes and figures *Brochopleurus australiae* sp. nov. from the Lower Murray cliffs, South Australia.
- Fell, H. B., 1953. The origin and migrations of Australasian echinoderm faunas since the Mesozoic. *Transactions of the Royal Society of New Zealand* 81(2): 245–255.
- Includes numerous references to Australian species. [Note: paper written before concept of continental drift generally accepted].
- Fell, H. B., 1963. New genera of Tertiary echinoids from Victoria, Australia. *Memoirs of the National Museum of Victoria* 26: 211–217.
- Describes and figures temnopleurid *Irenechinus hentyi* gen. et sp. nov. (p. 211, pl. 1) and brissid *Gillechinus cudmorei* gen. et sp. nov. (p. 213, pls 2–3).
- Fell, H. B., 1964. Oligocene echinoids from Trelissic Basin, New Zealand. *Transactions of the Royal Society of New Zealand* 4(15): 201–205, pls 1–4.
- Eracts a new genus *Goniosigma* with New Zealand echinoid *Echinus enysa* Hutton 1873, as type species (p. 201, pl. 1/1–2); describes and figures *Brissopsis praeluzonica* sp. nov., a New Zealand species later recorded in Australia (McNamara et al. 1986), p. 203, pls 3/5, 4/6. [Remainder of contents applies to New Zealand only]
- Fleming, P. J. G., 1970. The fauna of the Maryborough Formation, south-east Queensland. *Geological Survey of Queensland Publication* 346, *Palaeontological Papers* 20: 1–11, pls 1–3.
- Describes and figures the Aptian echinoid *Hemiasper sweeti* (Etheridge, 1892), p. 10, pl. 3/5–11.
- Fletcher, H. O., 1971. Catalogue of type specimens in the Australian Museum, Sydney. *Memoirs of the Australian Museum* 13: 1–167.
- Includes holotypes of *Archaeocidaris* ? *selwyni* Etheridge, 1892 (F35452); *Cavanechinus warreni* Brown, 1967 (F52154); *Hemipatagus woodsii* Etheridge, 1875 (F17500), and figured specimen *Archaeocidaris* sp. indet Etheridge, 1892 (F35453), p. 134.
- Forbes, E., 1852. Our knowledge of Australian rocks as derived from their organic remains. Pp. 41–67 in J. B. Jukes et al., *Lectures on gold for the instruction of emigrants about to proceed to Australia*. David Bogue, London.
- Figures lateral view of *Echinolampas* sp.[?] and adoral view of *Spatangus* (p. 50) Text also lists fossil sea urchins *Echinolampas*, *Brissus*, *Spatangus*, *Echinus* and *Scutella* (p. 50).
- Foster, R. J., 1970a. Origin of Batesford Limestone (Miocene), Victoria. *Proceedings of the Royal Society of Victoria* 83(2): 191–198.
- Discusses the echinoid fauna of the Batesford Limestone and compares it with living faunas to determine the probable depositional environment of the limestone. Concludes there were two distinct echinoid faunas: A, rock dwelling shallow water Regularia; B, burrowing deeper water Spatangoida (p. 196).
- Foster, R. J., 1970b. Echinoids. P. 9 in J. M. Lindsay, Port Willunga Beds in the Port Willunga - Seaford area. *Geological Survey of South Australia, Quarterly Geological Notes* 36.
- Lists common echinoids found in these beds (p. 9). [Note: uses the generic name *Schizobrissus* for *Eupatagus decipiens* Tate, 1891 [= *Meoma tuberculata* Hutton, 1873]
- Foster, R. J., 1974. Eocene echinoids from the Drake Passage. *Nature* 249 (5459): 751.
- Discusses echinoid faunas in relation to opening of seaway between Australia and Antarctica etc.
- Foster, R. J. and Philip, G. M., 1976a. *Corystus dysasteroides*, a Tertiary holasteroid echinoid formerly known as *Duncaniaster australiae*. *Transactions of the Royal Society of South Australia* 100(3): 113–116.
- Discusses type species of *Holaster australiae* Duncan, 1877 (figs 1, 2/A,B,D); *Rhynchopygus dysasteroides* Duncan, 1877 (fig. 2/C,E,F); *Holaster difficilis* Duncan, 1887; *Galeraster australiae* Cotteau, 1890 (fig. 2/G,H,I) etc. All are included in one species designated *Corystus dysasteroides* (Duncan).
- Foster, R. J. and Philip, G. M., 1976b. Statistical analysis of the Tertiary holasteroid *Corystus dysasteroides* from Australia.



- Thalassia Jugoslavica* 12(1): 129–144.
- Analysis of specimens from Late Eocene to Early Miocene (seven populations).
- Foster, R. J. and Philip, G. M., 1978. Tertiary holasteroid echinoids from Australia and New Zealand. *Palaeontology* 21(4): 791–822, pls 85–93.
- Describes and figures *Corystus dysasteroides* (Duncan, 1877), p. 794, pls 85/1–5, 86/1 5, text fig. 1; *Cardabia bullarensis* sp. nov. (p. 798, pls 90/3–4, 91/1 3); *Huttonechinus spatangiformis* (Hutton, 1873), p. 800, pls 87/1–4, 88/1 3, text fig. 2 [NZ only]; *Giraliaster jubileensis* sp. nov. (p. 805, pl. 89/1–6, text figs 3,4a); *G. tertiarus* (Gregory, 1890), p. 808, pls 90/1,2, 92/2,4–5,7, 93/1, text fig. 4b; *G. sulcatus* (Hutton 1873), p. 812, pl. 93/3,5, text fig. 4b; *G. bellissae* sp. nov. (p. 813, pl. 91/4 6); *Echintocorys australis* sp. nov. (p. 815, pls 92/1,3,6, 93/2,4, text fig. 5). Also includes note on “Palaeogeographic conclusions” in which *Eupatagus laubei* Duncan, is referred to the genus *Spatagobrisus* (pp. 816–820).
- Foster, R.J. and Philip, G. M., 1980. Some Australian Late Cainozoic echinoids. *Proceedings of the Royal Society of Victoria* 91(2): 155–160, pls 19–20.
- Describes and figures *Fellaster incisa* (Tate, 1893), p. 156, pl. 20/4,6–7, text fig. 1; *Peronella orbicularis* (Leske, 1778), p. 156, pl. 20/1–2,5; *Amblypneustes formosus* Valenciennes, 1846 (p. 159, pl. 19/5–7; *Amblypneustes* sp. nov. (p. 159, pl. 19/4); *Microcyphus annulatus* Mortensen, 1943 (p. 160, pl. 19/1–3).
- Gill, E. D., 1943. The geology of Warrnambool. *Proceedings of the Royal Society of Victoria* 55(2): 133–154, pl. 2.
- Refers to *Lovenia forbesi* as a common fossil in Miocene limestones at Warrnambool (p. 134).
- Gill, E. D., 1947. Some features of the coastline between Port Fairy and Peterborough, Victoria. *Proceedings of the Royal Society of Victoria* 58: 37–42, pl. 2.
- Notes *Lovenia forbesi* a common fossil in Miocene marine limestones between Childers Cove and Peterborough (p. 39).
- Gill, E. D., 1952. Note on the spines of a Tertiary echinoid from Victoria. *Proceedings of the Royal Society of Victoria* 64(1): 1–3.
- Describes and figures (text fig. 1, p. 2) spines of *Linthia nelsoni* (McCoy).
- Glaessner, M. F., 1953. Conditions for Tertiary sedimentation in southern Australia. *Transactions of the Royal Society of South Australia* 76: 141–146.
- Refers to *Australanthus longianus* Gregory as important restricted species of the Tortachilla fauna (p. 142) and also its occurrence at Kingscote, Kangaroo Island and in the lower Nullarbor (Eucla) limestone (p. 143).
- Glaessner, M. F. and Parr, W. J., 1943. Appendix - The Foraminifera of the Eocene Beds at Pebble Point, Princetown. Pp. 252–253 in G. Baker, Eocene deposits south-east of Princetown, Victoria. *Proceedings of the Royal Society of Victoria* 55(2).
- Notes that in addition to foraminifera; echinoid spines, bryozoan fragments, small mollusca, ostracods and fish teeth occur in the washings from matrix adhering to the larger fossils.
- Glaessner, M. F. and Wade, M., 1958. The St Vincent Basin. Pp. 115–126 in M. F. Glaessner and L. W. Parkin (eds), The Geology of South Australia. *Journal of the Geological Society of Australia* 5(2).
- Refers to *Salenia tertiaria* and *Australanthus longianus* being restricted to the Eocene (Tortachilla Limestone), p. 117, and *Duncanaster australiae* and *Lovenia “forbesi”* occurring in the Oligocene/Lower Miocene bryozoal sediments (p. 121).
- Glauert, L., 1923. *Cidaris Comptoni* sp. nov. A Cretaceous echinoid from Gingin. *Journal and Proceedings of the Royal Society of Western Australia* 9(1): 48–52.
- Describes and figures *Cidaris comptoni* sp. nov. (p. 48, pl. 3).
- Glauert, L., 1926. A list of Western Australian fossils. Pp. 36–71 in R. W. Brettnall, F. Chapman and L. Glauert, Palaeontological contributions to the geology of Western Australia, series 7, nos 13–15. *Western Australia Geological Survey Bulletin* 88.
- Lists *Cidaris comptoni* Glauert from the Cretaceous of Gingin and *Cidaris* spp. from Gingin and Round Hill, Dandarragan (p. 57); *Micraster* sp. and *Hemaster* sp. from the Cainozoic of Cape Riche and *Linthia* sp. or *Schizaster* sp. from Albany and Cape Riche (p. 62).
- Gostin, V. A., 1973. Geology of the Mornington Peninsula. Pp. 46–52 in J. McAndrew and M. A. H. Marsden (eds), *Regional guide to Victorian geology*. School of Geology, University of Melbourne.
- Notes the presence of echinoids at Fossil Beach, Mornington (p. 52).
- Gray, J. E., 1851. Description of some new genera and species of Spatangidae in the British Museum. *Annals and Magazine of Natural History* (2) 7: 130–134.
- Describes *Desoria australis* gen. et sp. nov. (p. 133), an extant species subsequently recorded as a fossil in the Late Pleistocene Tamala Limestone, Western Australia (McNamara, 1985a).
- Gregory, J. W., 1890. Some additions to the Australian Tertiary Echinoidea. *The Geological Magazine* 27 [n.s., decade 3, vol. 7, no. 11]: 481–492, pls 13–14.
- Describes and figures *Cassidulus longianus* sp. nov. (p. 482, pl. 13/1–3); *Cardiaster tertiarus* sp. nov. (p. 484, pl. 14/2–3); *Coelopleurus paucituberculatus* sp. nov. (p. 486, pl. 14/4–5); *Echinolampas posterocrassus* sp. nov. (p. 483, pl. 13/46); *Hemaster planedechivis* sp. nov. (p. 488, pl. 14/6–7). Erects new species *Pericosmus mccoysi* for *P. compressus* McCoy and places *Megalaster compressus* Duncan, 1877, in the genus *Pericosmus* (p. 485, pl. 14/1). [Note: McNamara (1986a) includes this particular reference under *Meoma tuberculata* Hutton]. Also comments on *Cidaris (Leuocidaris)* sp. Duncan, 1877 (p. 481); *Clypeaster gippslandicus* McCoy, 1879 (p. 487); *C. (Monostychia) australis* Laube, 1869 (p. 487) and *Echinolampas ovulum* Laube, 1869 (p. 483).
- Gregory, J. W., 1892. Further additions to Australian fossil Echinoidea. *The Geology Magazine* 29 [n.s., decade 3] 9(10): 433–437, pl. 12.
- Describes and figures *Cassidulus florescens* sp. nov. (p. 435, pl. 12/2 4); *Laganum decagonale* var. *rictum* var. nov. (p. 433, pl. 12/1). Places *Eupatagus decipiens* Tate, 1891 in the genus *Macropneustes* (p. 436).
- Gregory, J. W., 1914. The correlation of the Australian marine Kainozoic deposits: Evidence of the echinoids, bryozoa and some vertebrates. *The Geological Magazine* 51: 516–517.
- Notes that the characteristic echinoids are considered to be one fauna, essentially Miocene. Specific reference made to *Clypeaster gippslandicus*, *Monostychia australis*, *Lovenia forbesi* and the genus *Duncanaster* replacing the Australian species of *Holaster* (p. 516).
- Gregory, J. W., 1915. The correlation of the Australian marine Kainozoic deposits - Evidence of the echinoids, bryozoa and some vertebrates. P. 376 in, *Report of the eighty-fourth meeting of the British Association for the Advancement of Science, Australia, 1914*. John Murray, London.
- Text identical to that of Gregory, J. W., 1914.
- Hall, T. S., 1907. Four new echinoids from the Australian Tertiary. *Proceedings of the Royal Society of Victoria* 19(2): 47–53, pls 13–16.
- Describes and figures *Echinoneus dennanti* sp. nov. (p. 47, pl. 13/1–2); *Prenaster aldingensis* sp. nov. (p. 48, pl. 13/3–4); *Brissopsis tatei* sp. nov. (p. 49, pl. 13/5–6); *Schizaster sphenoides* sp. nov. (p. 51, pls 14/7–8, 16/12). Also notes and figures *Schizaster abductus* Tate, 1891 (p. 52, pls 15/9 10, 16/11).
- Hall, T. S., 1908. On the occurrence of a marsupium in an echinoid belonging to the genus *Scutellina*. *Proceedings of the Royal Society of Victoria* 20(2): 140–142.
- Figures ‘*Scutellina*’ sp. with marsupium [= *Fossulaster halli*] from near the mouth of the Glenelg River, Victoria (p. 140). Also notes that *Scutellina patella* Tate, 1891, and *Scutellina morgani* Cotteau, 1891, are probably the same.
- Hall, T. S., 1910. Notes on the geology of the country about Anglesea. *Proceedings of the Royal Society of Victoria* 23(1): 44–53, pl. 11.
- Notes the abundance of *Cassidulus australiae* (Duncan)\* in the Point Addis Limestone (p. 46). Compares the presence of fossils, including eight echinoids, found at Aireys Inlet and Point Addis with those found at Spring Creek, Torquay (p. 52). [\* Note incorrect identification of *C. florescens*]
- Hall, T. S. and Pritchard, G. B., 1892. Notes on the Lower Tertiaries of the southern portion of the Moorabool Valley. *Proceedings of the Royal Society of Victoria* 4(1): 9–26, pls 3–4.
- Lists echinodermata from: “Filter quarries” and “Upper quarry” (table 1, p. 18) and five other localities in the area (table 2, p. 19). Locality map (pl. 3).
- Hall, T. S. and Pritchard, G. B., 1894. Notes on the Eocene strata of



- the Bellarine Peninsula with brief references to other deposits. *Proceedings of the Royal Society of Victoria* 6: 1–23, pl. 1.
- Notes occurrence of Echini spines in cliffs on western shore of Corio Bay and Cidaroid spines from Curlew (p. 6). Also lists *Lovenia forbesi* from Spring Creek (p. 10).
- Hall, T. S. and Pritchard, G. B., 1895. The older Tertiaries of Maude, with an indication of the sequences of the Eocene rocks of Victoria. *Proceedings of the Royal Society of Victoria* 7: 180–196.
- Includes table comparing fossils found in the Upper Maude Beds with those from Waurn Ponds (pp. 184–185); lists echinoids from Lower Maude Beds (p. 188). [Note: record of *Cyclaster archeri* from Waurn Ponds].
- Hall, T. S. and Pritchard, G. B., 1896. Remarks on the proposed subdivision of the Eocene rocks of Victoria. *Proceedings of the Royal Society of Victoria* 8: 151–168.
- Lists Lower Maude fossils, including echinoids, occurring at other localities (table p. 157); includes additions and corrections to the list of species from Waurn Ponds\* [Note: *Cassidulus florescens* Gregory substituted for *Echinobrissus* sp.], p. 159; revises and extends list of fossils from the limestone of Batesford (p. 160); and lists limestone fossils from Spring Creek (p. 162). [\* Hall and Pritchard, 1895.]
- Hall, T. S. and Pritchard G. B., 1897a. A contribution to our knowledge of the Tertiaries in the neighbourhood of Melbourne. *Proceedings of the Royal Society of Victoria* 9: 187–229.
- Lists fossils, including echinoderms, found at Beaumaris (east of Hotel, p. 191 - west of Hotel, p. 195); Ricketts Point (p. 201); Red Bluff, Sandringham (p. 202); Royal Park (lower beds), p. 207; Green Gully, Keilor (p. 213), and Altona Bay (p. 219)
- Hall, T. S. and Pritchard G. B., 1897b. Geology of the Lower Moorabool. *Proceedings of the Royal Society of Victoria* 10(1): 43–56, pls 1–2.
- Notes “vast quantities of the peculiar little echinoderm *Fibularia*” (p. 45); Cidarid spines from Bakers Road cutting (p. 47) and the “Railway-cutting” (p. 53).
- Hall, M. A. and Pritchard, G. B., 1899. The Tertiary deposits of the Aire and Cape Otway. *Proceedings of the Royal Society of Victoria* 12(1): 36–58, pl. 6.
- Lists echinoids from Stud Point (p. 39); Fishing Point (p. 40); the Calder Limestone (p. 45); Wilkinson’s No 3 local. (p. 49), No.4 local. (p. 47) and No.5 local. (Castle Cove), p. 50.
- Hawkins, H. L., 1916. A remarkable structure in *Lovenia forbesi* from the Miocene of Australia. *The Geological Magazine* 53: 100–105.
- Describes plate-crushing and resorption in four of the interambulacral areas of the echinoid (text figs 1–2).
- Hawkins, H. L., 1920. Morphological studies on the Echinoidea Holecypoida and their allies, No. 10. On *Apatopygus* gen. nov. and the affinities of some recent Nucleolitoida and Cassiduloida. *The Geological Magazine* 57: 393–401, pl. 7.
- Erects new genus *Apatopygus* (type *Nucleolites recens* Edwards, 1836). [Note: at this time the extant N.Z. species *A. recens* is the only recorded species of this genus]
- Henderson, R. A., 1975. Cenozoic spatangoid echinoids from New Zealand. *New Zealand Geological Survey Paleontological Bulletin* 46: 1–128.
- Includes descriptions and figures of four spatangoid echinoids common to New Zealand and Australia: *Brissopsis praeluzonica* Fell (p. 35, pls 6/5–6, 10/4–5), *Cyclaster posita* (Hutton), p. 39, pl. 10/1–3, text fig. 8a–b [considered *C. archeri* by McNamara et al., 1986], *Meoma tuberculata* Hutton (p. 42, pl. 11/1–4), *Pericosmus crawfordi* (Hutton), p. 54, pls 15/1–5, 17/1–3, text fig. 12 [refer synonymy of *P. compressus* (Duncan); McNamara and Philip, 1984, p. 321]. Also refers to resemblance of many New Zealand species to those of Australia (pp. 17, 32, 33, 34, 40/41, 56, 58). Includes extensive section on biogeography (pp. 61–74).
- Henderson, R. A. and McNamara, K. J., 1985. Maastrichtian non-heteromorph ammonites from the Miria Formation, Western Australia. *Palaeontology* 28(1): 35–88, pls 1–9.
- Notes the presence of a number of undescribed echinoids in the Miria Formation, as well as brachiopods, corals, sponges, bryozoans and shark teeth (p. 35).
- Hill, D., Playford, G. and Woods, J. T. (eds), 1968. *Cretaceous fossils of Queensland*. Queensland Palaeontographical Society, Brisbane, pp. kl–k35.
- Notes and figures *Hemiaster sweeti* (Etheridge, 1892) from Baddow quarry, Maryborough (pp. k22–k23). [Note: generic name change from *Micraster*].
- Hocking, J. B., 1970. Geology of Lower Miocene calcareous deposits in the Sale-Yarram region, South Gippsland. *Department of Mines, Victoria, Mining and Geological Journal* 6(6), 80–90.
- Notes echinoids are one of the main groups of fossils in the Lower Miocene deposits of the Sale-Yarram region (p. 87). Refers to the presence of echinoid spines in the Holey Plains Marl Member and spines and plates in the undifferentiated Lower Miocene deposits and the Glencoe Limestone (p. 88).
- Hocking, R. M., 1990a. Carnarvon Basin. Pp. 457–495 in Geology and mineral resources of Western Australia. *Geological Survey of Western Australia Memoir* 3.
- “Stratigraphy of the Carnarvon Basin” (Table 4–20, p. 464) refers to echinoids in the Tulki Limestone (Miocene); Mandu Limestone (Oligocene-Miocene).
- Hocking, R. M., 1990b. Eucla Basin. Pp. 548–561 in Geology and mineral resources of Western Australia. *Geological Survey of Western Australia Memoir* 3.
- “Stratigraphy of the Eucla Basin” (Table 4–27, p. 550) refers to echinoids in the Roe Calcarene (Pliocene-Pleistocene); Colville Sandstone (Miocene); Abrakurrie Limestone (Miocene); Toolinna Limestone (Eocene).
- Hocking, R. M., 1990c. Bremer Basin. Pp. 561–563 in Geology and mineral resources of Western Australia. *Geological Survey of Western Australia Memoir* 3.
- “Stratigraphy of the Bremer Basin” (Table 4–28, p. 563) refers to echinoids in the Werillup Formation (Eocene) of the Plantagenet Group.
- Hocking, R. M., Moors, H. T. and van de Graaff, J. E., 1987. Geology of the Carnarvon Basin, Western Australia. *Geological Survey of Western Australia, Bulletin* 133: xiv + 289 pp.
- Refers to echinoids in the Cardabia Calcarene (p. 167); Giralja Calcarene (p. 173); Mandu Limestone (p. 178), Tulki Limestone (p. 181).
- Holmes, F. C., 1987a. A brief review of Australian Tertiary echinoids. *M.A.P.S. [Mid-America Paleontology Society] Digest* 10(5), Expo IX edition, 1987: 79–88.
- Includes figures of *Monostychia australis* (p. 80), *Corystus dysasteroides* (p. 82), *Lovenia woodsi* and *L. forbesi* (p. 85), and map showing distribution of main marine Tertiary sedimentary basins in Australia in which echinoids are known (p. 79).
- Holmes, F. C., 1987b. A brief review of Australian Tertiary echinoids. *The Fossil Collector* 22/23: 25–36.
- Reprint of Holmes, F. C., 1987a, with minor amendments.
- Holmes, F. C., 1988. Report on the occurrence of the echinoid *Sismondia murravica* in the Gippsland Basin. *The Fossil Collector* 25: 28–33.
- Records the occurrence of *Sismondia murravica* Tate, 1893, from the Bairnsdale Limestone Member of the Gippsland Limestone near Nowa Nowa in eastern Victoria. Compares the Gippsland specimens with the original description by Tate and the adoral plate structure (text fig. 1) with that of Durham (1955)
- Holmes, F. C., 1989. The history and distribution of the echinoid genus *Clypeaster* in the Tertiary of southern Australia. *The Fossil Collector* 29: 7–18.
- Figures adoral plate structure of *Clypeaster gippslandicus* (fig. 4) and variations to test shape (fig. 3) Lists known occurrences of the genus in Australia, including localities not previously recorded. Also includes history of confusion between *Clypeaster* and *Monostychia* in the 19th century
- Holmes, F. C., 1991a. Australian Tertiary cassiduloids - an overview (Part 1). *The Fossil Collector* 34: 11–27.
- Figures and gives brief outline of history, geologic range, distribution, external morphology and size of the five non echinolampadids. *Australanthus longianus* (Gregory, 1890), p. 14, figs 1C, 2F, 3A–B; *Eurhodia australiae* (Duncan, 1877), p. 17, figs 2E, 4A–B; *Apatopygus vincentinus* (Tate, 1891), p. 19, figs 2D, 5A–B; *Cassidulus florescens* Gregory, 1892 (p. 21, figs 2C, 6A–B); *Studeria elegans* (Laube, 1869), p. 23, figs 2A, 7A–B. Also figures *Studeria cf. elegans* (Laube, 1869) from the Early Miocene near Mannum, South Australia (fig. 2B).
- Holmes, F. C., 1991b. Australian Tertiary cassiduloids - an overview



(Part 2). *The Fossil Collector* 35: 15–30.

Figures and gives brief outline of history, geologic range, distribution and size, and, based generally on McNamara and Philip (1980), external morphology of recorded species of Australian echinolampadids: *Echinolampas posterocrassa posterocrassa* Gregory, 1890 (p. 17, figs 1, 2A–B); *E. p. cur tata* McNamara and Philip, 1980 (p. 19); *E. tatei* Lambert, 1898 (p. 19, fig. 4A–B); *E. aff. tatei* Lambert, 1898 (p. 20); *E. gambierensis* Tenison Woods, 1867 (p. 21, fig. 5A–B); *E. morgani* Cotteau, 1890 (p. 24, fig. 6A–B); *E. ovulum* Laube, 1869 (p. 25, fig. 7A–B); *E. gregoryi* gregoryi McNamara and Philip, 1980 (p. 26, fig. 8A–B); *E. g. corrugata* McNamara and Philip, 1980 (p. 26); *E. laubei* McNamara, 1987 [nom. nov.], p. 27; *E. westraliensis* (Crespin, 1943), p. 27. Notes the superficial resemblance to echinolampadids of the neolampadids, *Pisolampas* and *Notolampas* (p. 28, fig. 9).

Holmes, F. C., 1993. Brief comments on predation of the fossil sand dollar *Fellaster incisa* (Tate). *The Fossil Collector* 39: 5–10.

Discusses and details extent of ? carnivorous gastropod predation on 20 specimens of *Fellaster incisa* from the Late Pliocene micaceous sands of the Norwest Bend Formation near Murray Bridge, South Australia.

Howchin, W., 1903. Further notes on the geology of Kangaroo Island. *Transactions and Proceedings and Report of the Royal Society of South Australia* 27(1): 75–90.

Notes presence of *Cassidulus longianus*, *Echinolampas posterocrassus*, *Eupatagus coranginum* and *Fibularia gregata*, south of Queenscliff [Kingscote] jetty (p. 76).

Howchin, W., 1912. On an outlier of older Cainozoic rocks in the River Light near Mallala. *Transactions and Proceedings of the Royal Society of South Australia* 36: 14–20, pl. 1.

Lists the echinoids *Lovenia forbesi*, *Monostychia australis*, *Fibularia gregata* and *Echinolampas posterocrassus* from the above locality (p. 17).

Howchin, W., 1918. *The geology of South Australia* (In two Divisions). Education Department: Adelaide, xvi + 543 pp.

Notes under Cretaceous System – *Micraster* at Maryborough, and spines (? *Cidaris*) at Gingin, Qld (p. 446), under Miocene (Lower Marine Series) – *Fibularia gregata* at Troubridge Hill (p. 459, fig. 322), *Cassidulus longianus* and *Echinolampas gambierensis* at Queenscliff [Kingscote], Kangaroo Island, S Aust (p. 462), and in a general list – *Lovenia*, *Monostychia*, *Cardiaster*, *Echinolampas*, *Cassidulus*, *Echinobrissus*, *Scutellina*, *Eupatagus*, *Paradoxechinus*, *Psammechinus*, *Hemaster* and *Fibularia* (p. 464); under Lower Pliocene – *Laganum platymodes* and *Macropneustes decipiens* (p. 468), under Upper Pliocene – Tate's reference to *Gomocidaris* sp. and *Strongylocentrotus* sp. from Dry Creek Bore (Adelaide), p. 470.

Howchin, W., 1923. A geological sketch section of the sea cliffs on the eastern side of Gulf St. Vincent from Brighton to Sellick's Hill, with descriptions. *Transactions of the Royal Society of South Australia* 47: 279–315, pl. 22–26.

Notes *Laganum platymoides* from Hallet's Cove (p. 290), from "Section D" – mouth of Onkaparinga River to Red Ochre Cove (p. 300); and from Lower Pliocene beds in "Section C" – Red Ochre Cove to Snapper Point, S. Aust. (p. 306). No other references to echinoids!

Howchin, W., 1928. *The building of Australia and the succession of life: With special reference to South Australia. Part 2. Mesozoic and Cainozoic*. Government Printer, Adelaide, 205–448.

Discusses types and distribution of echinoids in southern Australia in chapter on Miocene System (pp. 402–406). Figures *Fibularia gregata* from Troubridge Hill, southern Yorke Peninsula (p. 403, fig. 171) and *Hemaster planedecivis*, *Schizaster sphenoides* and *Lovenia forbesi* (p. 404, fig. 172/A–C).

Howitt, A. W., 1875. Notes on the geology of part of the Mitchell River Division of the Gippsland Mining District. Pp. 59–73 in R. Brough Smyth, *Geological Survey of Victoria, Report of Progress* 2.

Includes footnote – "a large echinoid apparently belongs to the *Clypeaster* family" (p. 62).

Howitt, A. W., 1879. Notes on the physical geography and geology of North Gippsland. *Quarterly Journal of the Geological Society of London* 35: 1–41.

Gives brief note on Bairnsdale Limestone and presence of *Clypeaster* (p. 33).

Hutton, F. W., 1873. *Catalogue of the Tertiary Mollusca and Echinodermata of New Zealand in the collection of the Colonial*

*Museum*. Colonial Museum and Geological Survey Department: Wellington. 48 pp.

Describes *Amphidotus sulcatus* sp. nov. (p. 41) and *Meoma tuberculata* sp. nov. (p. 43) from New Zealand. [Note Foster and Philip (1978) refer *Cardiaster latecordatus* Tate, 1891, to *Girahaster sulcatus* (Hutton, 1873).]

Jackson, R. T., 1912. The phylogeny of the Echini, with a revision of Paleozoic species. *Memoir of the Boston Society of Natural History* 7: 1–491, pl. 1–76.

Considers *Archaeocidaris selwyni* Etheridge, 1892, and *Archaeocidaris* sp. indet. Etheridge, 1892, belong to the same species, the differences noted by Etheridge being simply due to age. [Original manuscript not checked].

Jenkin, J. J., 1968. The geomorphology and Upper Cainozoic geology of southeast Gippsland, Victoria. *Geological Survey of Victoria Memoir* 27: 1–147 + maps.

Notes echinoid (*Arachnoides incisa*) casts are common in the upper part of the Jemmy's Point Formation at Red Bluff, east of Lakes Entrance (p. 125).

Jenkin, J. J., 1988. Melbourne Trough – western side. Mornington Peninsula. Pp. 443–463 in I. Clark, B. Cook and G. C. Cochrane (eds), *Victorian geology excursion guide*. Australian Academy of Science in conjunction with the Geological Society of Australia (Victorian Division).

Notes occurrence of echinoids in the Balcombe Clay (p. 448), in particular the north end of Fossil Beach (p. 454).

Johnston, R. M., 1877. Further notes on the Tertiary marine beds of Table Cape. *Papers and Proceedings and Report of the Royal Society of Tasmania for 1876*: 79–90f.

Notes *Hemipatagus woodsii* Etheridge, most abundant echinoid in the "Turritella Group" bed (p. 83), lists echinoid species found at Table Cape (table p. 90f). [Refer also Woods, J. E. Tenison, 1877.]

Johnston, R. M., 1887. Reference list of the Tertiary fossils of Tasmania. *Papers and Proceedings of the Royal Society of Tasmania for 1886*: 124–140.

Lists *Lovenia forbesi* var. *woodsii* Etheridge Jun., *Micraster brevistella* Laube, *Micraster etheridgei* R. M. Johnston, and *Cidaris* (?) sp. (p. 130).

Johnston, R. M., 1888a. Observations with respect to the nature and classification of the Tertiary rocks of Australasia. *Papers and Proceedings of the Royal Society of Tasmania for 1887*: 135–207.

Lists distribution of echinoids in southern Australia (table pp. 168–169). *Micraster etheridgei* Johnston, 1877, now placed in the genus *Monostychia*.

Johnston, R. M., 1888b. *Systematic account of the Geology of Tasmania*. J. Walch and Sons, Hobart, xxii + 408 pp., 57 pls.

Table on pp. 230–231 similar to that in Johnston, 1888a

Jones, P. J., 1959. Preliminary report on Ostracoda from Bore B.M.R. No.2, Laurel Downs, Fitzroy Basin, Western Australia. Pp. 37–52 in *Papers on Western Australian stratigraphy and palaeontology. Department of National Development, Bureau of Mineral Resources, Geology and Geophysics Report* 38.

Records echinoid remains (cidaroid spines and tubercles) from Core 3, at a depth of 250–260 feet (p. 37). Notes fossil "Assemblage 1", found between the depths of 150 feet and 360 feet, indicates a late Tournaisian (Early Carboniferous) age.

Kenley, P. R., 1967. Tertiary. In *Geology of the Melbourne District, Victoria. Geological Survey of Victoria Bulletin* 59: 31–46, pl. 2.

Records *Lovenia forbesi* and *Monostychia* cf. *australis* in the 20 feet of beds above the nodule bed in the Black Rock Sandstone at Beaumaris, Victoria (p. 38). [Note: *Lovenia* species present is *L. woodsii* not *L. forbesii*.]

Kenley, P. R., 1971. Cainozoic geology of the eastern part of the Gambier Embayment, southwestern Victoria. Pp. 89–153 in H. Wopfner and J. G. Douglas (eds), *The Otway Basin of south eastern Australia. Special Bulletin of the Geological Surveys of South Australia and Victoria*.

Lists echinoids in Appendix 5–1 (Faunal and floral lists) as follows Bahgallah Formation – Undet. sp. (p. 144), Gambier Limestone, Glenaulin Clay Member – *Echinolampas* sp., *Cidaroids* spp. undet. (p. 147); Wataepoolan Limestone Member – *Echinolampas* cf. *gambierensis*, *Lovenia* sp. indet., *Eupatagus* sp., ? *Echinobrissus* sp., *Phyllacanthus duncani*, *Pericosmus* sp., ? *Stereocidaris australiae* and *Cidaroids* undet. (p. 148), Sandford Limestone Member – *Phyllacanthus duncani*, *Echinolampas gambierensis* (p. 150). Main text generally refers only to



- presence or otherwise of echinoids or echinoid spines.
- Kenny, J. P. L., 1938. Geology of the Kawarren - Gellibrand District. *Department of Mines, Victoria, Mining and Geology Journal* 1(3): 76-79.
- Notes the occurrence of abundant echinoid forms in the polyzoal limestone at Kawarren, just north of the railway station (p. 78).
- Kier, P. M., 1962. Revision of the cassiduloid echinoids. *Smithsonian Miscellaneous Collections* 144(3): 1-262, pls 1-44.
- Describes and figures *Echinolampas posterocrassus* Gregory (p. 113, pl. 32/5-7); *Australanthus longianus* (Gregory) p. 151, pl. 27/1-4. See also generic descriptions of *Echinolampas* Gray (p. 106), *Australanthus* Bittner (p. 151), *Cassidulus* Lamarck (p. 174), *Eurhodia* Haime (p. 212), *Studeria* Duncan (p. 216) and *Apatopygus* Hawkins (p. 223).
- Kier, P. M. and Lawson, M. H., 1978. Index of living and fossil echinoids 1924-1970. *Smithsonian Contributions to Paleobiology* 34: 1-182.
- Index prepared from citations in the Zoological record 1924-1970 [includes Australian species].
- King, D., 1950. Geological notes on the Nullarbor cavernous limestone. *Transactions of the Royal Society of South Australia* 73: 52-58.
- Notes abundant echinoids (*Cassidulus* sp.) in the upper horizons of a soft white chalk (depths of 100 to 150 feet) in the undisturbed limestone of the Nullarbor Plain (p. 57).
- Kitson, A. E., 1902. Report on the bryozoan limestone at Flinders. *Records of the Geological Survey of Victoria* 1(1): 49-51.
- Lists four echinoids from Flinders - *Paradoxechinus novus*, *Leiocidaris australis*, *Scutellina patella* and *Monostychia australis* (p. 51).
- Kitson, A. E., 1903. On the occurrence of older Cainozoic marine fossils near Hexham, western Victoria. *The Victorian Naturalist* 20(7): 91-95.
- Records an echinoid spine from bores near Hexham (N.W. of Mortlake), Victoria, (p. 95).
- Krause, F. M., 1874. Appendix A (Report, Cape Otway District). Pp. 99-107 in R. Brough Smyth, *Geological Survey of Victoria, Report of Progress* 1.
- Notes echinoid spines in the upper strata of brown limestone exposed along the coast from Jan Juc to Stony Creek near Point Castries and again in outcrops west of Cape Otway (p. 102).
- Kruse, P. M. and Philip, G. M., 1985. Tertiary species of the echinoid genus *Eupatagus* from southeastern Australia. Pp. 167-185 in J. M. Lindsay, (ed.), *Stratigraphy, palaeontology, malacology: papers in honour of Dr Nell Ludbrook. Department of Mines and Energy, South Australia, Special Publication* 5.
- Describes and figures *Eupatagus wrighti* Laube, 1869 (p. 168, pl. 1/1-6, text fig. 1A-C, 2); *E. murrayensis* Laube, 1869 (p. 169, pl. 1/7-10, text fig. 1D-F, 3); *E. cf. murrayensis* Laube, 1869 (p. 170, pl. 3/6-8, text fig. 4); *E. colabius* sp. nov. (p. 171, pls 1/11-13, 2/1-4, text fig. 6); *E. rotundus* Duncan, 1877 (p. 172, pls 2/6-11, 3/4, 5/1-3, text fig. 7); *E. cetus* sp. nov. (p. 173, pl. 4/4-8, text fig. 8); *E. anomalus* (Duncan, 1877), p. 173, pl. 2/5, 3/1-3, 5/4-5, text fig. 9); *E. ludbrookae* sp. nov. (p. 174, pls 3/5, 4/1-3, text fig. 10); *E. planulatus* sp. nov. (p. 175, pl. 4/9-11, text fig. 11). Notes *Eupatagus laubei* Duncan, 1877, best referred to the genus *Spatagobrisus* (Foster and Philip, 1978), p. 167).
- Lambert, J., 1893. Études morphologiques sur le plastron des Spatangides. *Bulletin de la Société des Sciences historiques et naturelles de l'Yonne* 47: 55-98 (French).
- Refers *Holaster australiae* Duncan, to the genus *Lampadocorys* Pomel (p. 97). [Original manuscript not checked].
- Lambert, J., 1896. Note sur quelques échinides Crétacés de Madagascar. *Bulletin de la Société Géologique de France* 24: 313-332, pls 10-13 (French).
- Proposes new genus *Duncanaster* with *Holaster australiae* Duncan 1877, as type (p. 317, note 2). [Note: *H. australiae* is a synonym of *Corystus dysasteroides* (Duncan, 1887)]
- Lambert, J., 1898. Echinodermes. *Revue critique de Paléozoologie* 2(4): 163-167 (French).
- Comments on Tate's 1898 "A second supplement to a census of the fauna of the Older Tertiary of Australia" (p. 164-165) and proposes *Echinolampas Tatei* for *Conoclypeus rostratus* Tate, 1893.
- Lambert, J., 1920. Sur quelques genres nouveaux d'échinides. *Mémoire Société Académique, d'agriculture, des sciences, arts et belles lettres du département de l'Aube* 84: 145-172, pls 1-2 (French).
- Erects new genus *Granobrisoides* with *Gualtieria australiae* Cotteau 1889 [O.D.], as type species (p. 168).
- Lambert, J. and Thiéry, P., 1909. *Essai de nomenclature raisonnée des échinides* 1. Librairie L. Ferrière, Chaumont, 1-80, pls 1-2 (French).
- Includes Historique, Generalities, Bibliographique (Nothing specific to Australia).
- Lambert, J. and Thiéry, P., 1910. *Essai de nomenclature raisonnée des échinides* 2. Librairie L. Ferrière, Chaumont, 81-160, pls 3-4 (French).
- Refers to the Australian fossil echinoid *Arachaeocidaris selwyni* Etheridge (p. 125).
- Lambert, J. and Thiéry, P., 1911. *Essai de nomenclature raisonnée des échinides* 3. Librairie L. Ferrière, Chaumont, 161-240, pls 5-6 (French).
- Refers to Australian fossil echinoids as follows: - *Echinopsis humilior* Bittner (*Psammechinus*), p. 185, *Salenida tertiaria* Tate (*Salenia*), p. 212; *Prionechinus woodsi* Laube (*Psammechinus*), p. 230; *Prionechinus lineatus* Duncan (*Temnopleurus*), p. 230, *Paradoxechinus novus* Laube (p. 230); *Paradoxechinus lineatus* Bittner (*Coptechinus*), p. 230; *Arbacina pulchella* Bittner (*Coptechinus*), p. 231, *Microcyphus annulatus* Mortensen (p. 235); *Amblypneustes formosus* Valenciennes (p. 236).
- Lambert, J. and Thiéry, P., 1914. *Essai de nomenclature raisonnée des échinides* 4. Librairie L. Ferrière, Chaumont, 241-320, pls 7-8 (French).
- Refers to Australian fossil echinoids as follows: - *Coelopleurus paucituberculatus* Gregory (p. 265); *Echinocyamus gregatus* Tate (*Fibularia*), p. 287; *Scutellina patella* Tate (p. 292), *Eoscutum morgani* Cotteau (*Scutellina*), p. 293; *Sismondia murravica* Tate (p. 296); *Clypeaster gippislandicus* McCoy (p. 299), *Anomalanthus tumidus* Woods (*Echinanthus*), attributed to the Pliocene of Australia (p. 310), *Monostychia australis* Laube with references to *Arachnoides loveni* and *A. elongatus* Duncan (p. 315).
- Lambert, J. and Thiéry, P., 1921. *Essai de nomenclature raisonnée des échinides* 5. Librairie L. Ferrière, Chaumont, 321-384, pl. 9 (French).
- Refers to Australian fossil echinoids as follows: - *Echinoneus dennanti* Hall (p. 331); *Galeraster australiae* Cotteau (p. 332); *Proccassidulus florescens* Gregory (*Cassidulus*) p. 362; *Australanthus longianus* Gregory (*Cassidulus*), p. 363; *Rhynchopygus dysasteroides* Duncan (p. 364), *Phiolampas vassali* Wright (*Pygorhynchus*), p. 372; *Studeria elegans* Laube (*Catopygus*), p. 372; *Echinolampas morgani* Cotteau [*Isolampas* Lambert], p. 380, *E. ovulum* Laube [*Miolampas* Pomel], p. 383; *E. posterocrassa* Gregory [*Miolampas* Pomel], p. 383. [Note: There is no reference to *Echinobrisus australiae* Duncan or *E. vinctinus* Tate].
- Lambert, J. and Thiéry, P., 1924. *Essai de nomenclature raisonnée des échinides* 6 and 7. Librairie L. Ferrière, Chaumont, 385-512, pls 10-11, 14 (French).
- Refers to Australian fossil echinoids as follows: - *Echinolampas gambierensis* Tenison Woods [*Paleolampas* Bell], p. 386; *Progonolampas Novaehollandiae* Bittner (p. 387), *Holaster tertiarius* Gregory (*Cardiaster*), p. 402; *Duncanaster australiae* Duncan (*Holaster*), p. 408; *Granobrisoides australiae* Cotteau (*Gualtieria*), p. 447; *Brissoides murrayensis* Laube (*Eupatagus*), *B. wrighti* Laube (*Eupatagus*), and *B. rotundus* Duncan (*Eupatagus*), p. 451; *Brissoides laubei* Duncan (*Eupatagus*) [*Heteropatagus*], p. 454; *Hemipatagus woodsi* Etheridge (p. 457); *Marettia anomala* Duncan (p. 458); *Lovenia forbesi* Woods (*Spatangus*), p. 467; *L. woodsi* Etheridge (cited by Cotteau), p. 467, *Cyclaster archeri* Tenison Woods (*Micraster*), p. 485; *C. lycoperdon* Bittner and *C. morgani* Cotteau (p. 486), *Brissopsis tatei* Hall (p. 489); *Hemimaster planedechvis* Gregory [*Intergraster* Lambert and Thiéry], p. 504
- Lambert, J. and Thiéry, P., 1925. *Essai de nomenclature raisonnée des échinides* 8 and 9. Librairie L. Ferrière, Chaumont, 513-607, pls 12-13, 15 (French).
- Refers to Australian fossil echinoids as follows: - *Pericosmus compressus* Duncan and *Victoriaster gigas* McCoy (*Pericosmus*), p. 513; *Prenaster aldingensis* Hall (p. 514); *Prenaster nelsoni* McCoy (*Pericosmus*), p. 515,



- Schizaster abductus* Tate (p. 524); *S. sphenoides* Hall (p. 525); *Fossulaster halli* Lambert (p. 577); *Echinodiscus orbicularis* Leske (p. 580); *Peronella platymodes* Tate (p. 581); *Monostychia etheridgei* Johnston (*Micraster*) and *Echinarachnius incisus* Tate (p. 583); *Scutella tamboensis* McCoy (p. 584).
- Laube, G. C., 1869. Über einige fossile Echiniden von den Murray Cliffs in Süd-Australien. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften zu Wien (math. naturw. Classe)* 59: 183–198, figs 1–8 (German).
- Describes and figures *Psammechinus Woodsi* sp. nov. (p. 185, fig. 1), *Paradoxechinus novus* gen. et sp. nov. (p. 188, fig. 2), *Monostychia australis* gen. et sp. nov. (p. 190, fig. 3); *Catopygus elegans* sp. nov. (p. 190, fig. 8); *Micraster brevistella* sp. nov. (p. 192, fig. 7); *Eupatagus wrighti* sp. nov. (p. 195, fig. 5), *Eupatagus murrayensis* sp. nov. (p. 196, fig. 6). Describes, but does not figure, *Echinolampas ovulum* sp. nov. (p. 191); and notes and figures *Hemipatagus forbesi* Woods (p. 193, fig. 4).
- Leske, N. G., 1778. *Additamenta ad Jacob Theodori Klein naturalem dispositionem Echinodermatum et lucubrationum de aculeis Echinorum marinarum*. Lipsiae, Uppsala, 278 pp, 54 pls (Latin).
- Describes and figures *Echinodiscus orbicularis* sp. nov. (p. 208, [144] pl. 45/6–7), an extant species subsequently recorded as a fossil in the Exmouth Sandstone (?) and the Roe Calcarene, Western Australia (Foster and Philip, 1980).
- Ludbrook, N. H., 1957. A reference column for the Tertiary sediments of the South Australian portion of the Murray Basin. *Journal and Proceedings of the Royal Society of New South Wales* 90(4): 174–180.
- Refers to the important zonal echinoid *Australanthus longianus* (Gregory) occurring in Bed 'B' of the Buccleuch Group (p. 176) and *Lovenia forbesi* in the Mannum Formation (p. 178).
- Ludbrook, N. H., 1958a. The Murray Basin in South Australia. Pp. 102–114 in M. F. Glaessner and L. W. Parkin (eds), *The Geology of South Australia*. *Journal of the Geological Society of Australia* 5(2).
- Refers to *Australanthus longianus* in the Buccleuch Bed 'B' and notes it is a stratigraphically important echinoid occurring in the Tortachilla and Wilson Bluff Limestones and in the limestone at Kingscote (p. 107). Lists *Monostychia australis*, *Scutellina patella*, *S. morgani*, *Echinolampas gambierensis*, *Eupatagus murrayensis*, *Lovenia "forbesi"* from the Gambier Limestone (p. 109); and *Monostychia australis*, *Fibularia gregata*, *Eupatagus murrayensis*, *Lovenia "forbesi"* from the Mannum Formation (p. 110).
- Ludbrook, N. H., 1958b. The Eucla Basin in South Australia. Pp. 127–135 in M. F. Glaessner and L. W. Parkin (eds), *The Geology of South Australia*. *Journal of the Geological Society of Australia* 5(2).
- Lists *Stereocidaritis australiae*, *Pseudechinus woodsii*, *Salenia tertiaria*, *Australanthus longianus*, *Eupatagus* sp. from the Wilson Bluff Limestone (p. 131); and ? *Stereocidaritis australiae*, *Pseudechinus woodsii*, *Fibularia gregata* from the Nullarbour Limestone (p. 132).
- Ludbrook, N. H., 1961. Stratigraphy of the Murray Basin in South Australia. *Geological Survey of South Australia Bulletin* 36: 1–96, pls 1–8.
- Lists dominant megafauna [including echinoids] from various formations and members (p. 12, table 1); echinoids from lower member of Mannum Formation (p. 44), from upper member (p. 45) and from Morgan Limestone (p. 47). Gives vertical range of megafossils at Mannum Pumping Station (table 5, p. 48). Figures *Australanthus longianus* (Gregory) from the Late Eocene Buccleuch Group Bed A, *Monostychia australis* from the Morgan Limestone; and *Lovenia forbesi* from the Mannum Formation (pl. 8). Several other minor references to echinoids elsewhere in the paper.
- Ludbrook, N. H., 1969. Tertiary Period. Pp. 172–203 in L. W. Parkin (ed.), *Handbook of South Australian Geology*. Geological Survey of South Australia.
- Notes *Lovenia forbesi* in the Mannum Formation (p. 180) and refers to echinoids [in general] in the Tortachilla Limestone (p. 188).
- Macumber, P. G., 1978. Evolution of the Murray River during the Tertiary Period. Evidence from northern Victoria. *Proceedings of the Royal Society of Victoria* 90(1): 43–52.
- Records *Lovenia woodsii* in the Parilla Sand at a quarry 11 km. west of Kerang, Victoria (p. 50).
- McCoy, F., 1874. [Table of fossils]. Pp. 33–36 in R. Brough Smyth, *Geological Survey of Victoria, Report of Progress* 1.
- In the Table, under Spatangidae, McCoy lists *Eupatagus forbesi*, *Scutella tamboensis* and *Echinolampas coriaceous* (p. 36). These are undescribed and unfigured manuscript names [refer also Etheridge, 1875].
- McCoy, F., 1879. Tertiary Echinodermata. Pp. 33–42, pls 59–60 in *Prodromus of the palaeontology of Victoria; or, figures and descriptions of the Victorian organic remains*, decade 6. Geological Survey of Victoria, Melbourne.
- Describes and figures *Clypeaster gippslandicus* sp. nov. (p. 33, pl. 59) and notes that it had previously been referred to as *Echinanthus testudinarius* Gray by Duncan (1877) and Tenison Woods (1878); describes *Lovenia forbesi* [incorrectly attributed to McCoy] and states that he can see no difference between *L. forbesi* and *L. woodsii* or Duncan's var. *minor* to justify separate species (pp. 37–40, pl. 60/1–4); notes and figures *Monostychia australis* Laube (p. 40, pl. 60/5) and relegates *Atrachnoides Loveni* Duncan to variety of *M. australis* (p. 42, pl. 60/6–7).
- McCoy, F., 1882. Tertiary echinodermata. Pp. 15–22, pls 64–68 in *Prodromus of the palaeontology of Victoria; or, figures and descriptions of the Victorian organic remains*, decade 7. Geological Survey of Victoria, Melbourne.
- Describes and figures *Pericosmus gigas* sp. nov. (p. 15, pls 64–65); *Pericosmus nelsoni* sp. nov. (p. 17, pls 66, 67/1); *Pericosmus compressus* sp. nov. [non *P. compressus* Duncan], (p. 21, pls 67/2, 68).
- McKinney, M. L., McNamara, K. J., Carter, B. D. and Donovan, S. K., 1992. Evolution of Paleogene echinoids: A global and regional view. Pp. 349–367 in D. Prothero and W. A. Berggren (eds.), *Eocene-Oligocene climate and biotic evolution*. Princeton University Press, Princeton.
- Includes sections on Indo-Pacific echinoids with references to Australian fauna (pp. 359, 363) and figure showing stratigraphic ranges of all known echinoid genera from southern Australia (p. 360–fig. 17 7).
- McNamara, K. J., 1985a. Taxonomy and evolution of the Cainozoic spatangoid echinoid *Protenaster*. *Palaeontology* 28(2): 311–330.
- Describes and figures *Protenaster australis* (Gray, 1851), p. 313, pls 32, 33/3–4, text fig 1 2; *P. antaustralis* (Tate, 1885), p. 318, pl. 33/1,2,5, text fig. 4; *P. preaustralis* sp. nov. (p. 321, pl. 33/6–8, 34/1–5, text figs 5–6); *P. philipi* sp. nov. (p. 322, pl. 34/6–7, text fig. 7). Discusses evolution of *Protenaster* (pp. 324–329).
- McNamara K. J., 1985b. The spatangoid echinoid *Linthia* from the Late Eocene of southern Australia. *Transactions of the Royal Society of South Australia* 109(4): 161–165.
- Describes and figures *Linthia pulchra* sp. nov. (p. 162, fig. 1). Notes a number of forms which have at sometime or other been incorrectly assigned to this genus.
- McNamara, K. J., 1986. First Mesozoic record of the cidaroid echinoid *Goniocidaritis*. *Alcheringa* 10(4): 353–354.
- Cidaritis comptoni* Glauret, 1923, from the Santonian-Campanian Gingen Chalk of Western Australia, is transferred to the genus *Goniocidaritis*.
- McNamara, K. J., 1987a. Taxonomy, evolution and functional morphology of southern Australian Tertiary hemiasterid echinoids. *Palaeontology* 30(2): 319–352.
- Describes and figures *Hemaster (Bolbaster) subidus* sp. nov. (p. 336, pls 44, 48/8, text fig. 3, 4, 5A, 6A, 8, 10, 11A, 12A); *H. (B.) dolosus* sp. nov. (p. 338, pl. 45/1–3, 6, text figs 4, 8), *H. (B.) verecundus* sp. nov. (p. 340, pls 45/4–5, 46/1–2, text figs 4, 8); *H. (B.) planedeclevis* Gregory, 1890 (p. 342, pls 46/3–6, 47/1–2, text figs 4, 6B, 8, 11B), *H. (B.) callidus* sp. nov. (p. 346, pls 47/4–8, 48/7, text figs 3, 4, 5B, 6C, 8, 10, 12B). Erects a new genus *Psephoaster* and describes and figures *Psephoaster lissos* sp. nov. (p. 347, pls 47/3, 10, text figs 7A, 10, 13A); *P. apokryphos* sp. nov. (p. 348, pls 47/9, 11–12, 48/4–6, text figs 7B, 13B); *P. klydonos* sp. nov. (p. 350, pl. 48/1–3, text figs 7C, 10, 13C). Discusses evolutionary trends and their functional significance in *Hemaster (Bolbaster)* and *Psephoaster* (pp. 321–335).
- McNamara, K. J., 1987b. Plate translocation in spatangoid echinoids; its morphological, functional and phylogenetic significance. *Paleobiology* 13(3): 312–325.
- Analyses and figures relative changes in plate position during ontogeny in Cainozoic spatangoid echinoid species of *Breynia*, *Lovenia*, *Protenaster* and *Echinocardium*.
- McNamara, K. J., 1987c. An enigmatic *Echinolampas* (Echinoidea) from the Miocene of Victoria. *Proceedings of the Royal Society of Victoria* 99(3): 109–110.
- Describes and figures *Echinolampas duncani* sp. nov. from Bairnsdale,



- Victoria [Note name change in McNamara, 1989a].
- McNamara, K. J., 1987d. The holasteroid echinoid *Echinocorys* from the Maastrichtian of Western Australia. *Records of the Western Australian Museum* 13(3): 419–426.
- Describes and figures *Echinocorys stomias* sp. nov. (p. 421, figs 1–3).
- McNamara, K. J., 1988. Heterochrony and the evolution of echinoids. Pp. 149–163 in C. R. C. Paul and A. B. Smith (eds), *Echinoderm phylogeny and evolutionary biology*. Oxford University Press, Oxford.
- Refers to the occurrence of *Breynia* aff. *carinata* d'Archiac and Haime, in the Middle Miocene of north western Australia (pp. 153–154). Also refers to Australian fossil species of *Protenaster* (p. 157); *Peronella*, including an undescribed species from the late Pliocene of the Roe Plains, Western Australia (p. 158); *Echinolampas* (pp. 159–160). Other general references to Australian Tertiary lineages include *Schizaster* (pp. 155, 157), *Hemaster* (pp. 157, 159), *Lovenia* (p. 159).
- McNamara, K. J., 1989a. *Echinolampas laubei* (Echinoidea), a replacement name for *Echinolampas duncani* McNamara 1897. *Journal of Palaeontology* 63(2): 257.
- Corrects a junior homonym of *Echinolampas duncani* Cotteau, 1891.
- McNamara, K. J., 1989b. The role of heterochrony in the evolution of spatangoid echinoids. *Geobios, Mémoire Spécial* 12: 283–295.
- Notes 48 species of spatangoid echinoids have been described from Tertiary strata in southern Australia and that 9 species still await formal description (p. 285). Uses Australian genera in discussion of morphological change through time, namely: *Paraster* - *Schizaster* lineage (p. 289, figs 4–5), *Hemaster* lineage (p. 289, fig. 6), *Lovenia* lineage (p. 291, fig. 7) and *Protenaster* lineage (p. 292, fig. 8).
- McNamara, K. J., 1990. Echinoids. Pp. 205–231 in K. J. McNamara (ed.), *Evolutionary Trends*. Bellhaven Press, London.
- Notes evolutionary trends in various Australian echinoid lineages. Records the fibulariid *Echinocyamus planissimus* H. L. Clark 1938; from the Pliocene to Recent sediments in the Perth Basin, Western Australia (p. 210, fig. 9.4/A–C).
- McNamara, K. J., 1991a. Murder and mayhem in the Miocene. *Natural History* 8/91: 40–47.
- Based on the lineage of the genus *Lovenia* in the Australian fossil record, discusses the effect of predation by gastropods on the evolution of heart urchins.
- McNamara, K. J., 1991b. A guide to the echinoids of the Middle Miocene Rutledge Marl, Victoria. *The Victorian Naturalist* 108(1): 8–19.
- Briefly describes and figures *Hemaster* (*Bolbaster*) *callidus*, *Pericosmus quasimodo*\*, *Schizaster sphenoides*, *Brissopsis tatei*\*, *Eupatagus anomalus*, *Peraspatangus depressus*, and *Spatagobrissus laubei*\* from the Port Campbell Limestone, Rutledge Marl Member. Also refers to *Lovenia* sp. nov., *Amoraster paucituberculata* and the three marked with an asterisk from the overlying Peterborough Member.
- McNamara, K. J., 1992a. Geological and stratigraphical distribution of the echinoid *Echinometra mathaei* (Blainville) in Western Australia. *Records of the Western Australian Museum* 16(1): 79–86.
- Records *Echinometra mathaei* (Blainville, 1825), *Protenaster australis* (Grey, 1851), and *Phyllocanthus irregularis* Mortensen, 1928, as fossils in the Tamara Limestone (Late Pleistocene) at Cape Burney, near Geraldton, Western Australia (p. 81). Discusses the Neogene disposal of *Echinometra mathaei* across the Indian Ocean (p. 84).
- McNamara, K. J., 1992b. *A guide to the fossils of the Albany region*. Department of Earth and Planetary Sciences, Western Australian Museum : Perth. 12 pp.
- Briefly notes and figures (p. 4–5), cidaroid plates and spines (figs 5–7), *Echinolampas posterocrassa* (figs 8–9), *Eurhodia australiae* (fig. 10), *Australanthus longianus* (fig. 11), *Gillechinus cudmorei* (fig. 12), from the Pallinup Siltstone and Nanarup Limestone (Late Eocene) of the Albany region, Western Australia.
- McNamara, K. J., 1993. A new genus of brissid echinoid from the Upper Oligocene of Victoria. *Proceedings of the Royal Society of Victoria* 105 (1) : 39–48.
- Describes and figures *Apoxypetalum chenjafr* gen. et sp. nov. from the Jan Juc Formation, Waurn Ponds Limestone Member at Waurn Ponds, Victoria (pp. 40–44, figs 2–4). Lists and compares the echinoid fauna of the Waurn Ponds Limestone with that of the Point Addis Limestone and the undifferentiated section of the Jan Juc Formation (pp. 44–47, tables 1–2).
- McNamara, K. J. and Ah Yee, C., 1989. A new genus of brissid echinoid from the Miocene of Australia. *Geological Magazine* 126(2): 177–186.
- Describes and figures *Amoraster paucituberculata* gen. et sp. nov. (p. 179, figs 2–4) from the Bochara Limestone Member at Muddy Creek, and the Port Campbell Limestone at Portland, Victoria and *A. tuberculata* sp. nov. (p. 181, fig. 6) from the Mannum Formation, Mannum, South Australia.
- McNamara K. J. and Brimmell, K., 1992. *A guide to the fossils of the Newmarracarra Limestone*. Department of Earth and Planetary Sciences, Western Australian Museum : Perth. 12 pp.
- Describes and figures an unnamed echinoid spine from the Middle Jurassic, Newmarracarra Limestone (p. 10, fig. 39).
- McNamara, K. J. and Friend, D., 1991. *A guide to the fossils of the Gingin Chalk*. Department of Earth and Planetary Sciences, Western Australian Museum : Perth. 12 pp.
- Briefly notes and figures *Goniocidaris comptoni* (Glauert, 1923), echinoid spines and *Hemaster* sp. from the Santonian (Late Cretaceous) Gingin Chalk, Western Australia (p. 8–9, figs 29–31).
- McNamara, K. J. and Philip, G. M., 1980a. Australian Tertiary schizasterid echinoids. *Alcheringa* 4(1): 47–65.
- Describes and figures *Schizaster* (*Paraster*) *carinatus* sp. nov. (p. 50, fig. 1A–C); *S. (P.) tatei* sp. nov. (p. 51, fig. 2A–E); *Schizaster* (*Schizaster*) *halli* sp. nov. (p. 52, fig. 3A–D); *S. (S.) aff. halli* sp. nov. (p. 54, fig. 4); *S. (S.) abductus* Tate 1891 (p. 54, fig. 5A–E); *S. (S.) sphenoides* Hall 1907 (p. 56, fig. 6A–E); *Schizaster* (*Dipneustes*) *fosteri* sp. nov. (p. 58, fig. 7A–B). Discusses progressive morphological changes in Australian schizasterids and their functional significance and gives an evolutionary explanation of morphological development (pp. 59–65, figs 8–9).
- McNamara, K. J. and Phillip, G. M., 1980b. Tertiary species of *Echinolampas* (Echinoidea) from southern Australia. *Memoirs of the National Museum of Victoria* 41: 1–14, pl. 1–4. [\* incorrect spelling]
- Describes and figures *Echinolampas posterocrassa posterocrassa* Gregory, 1890 (p. 1, pl. 1/1–6, text figs 1,6), *E. posterocrassa curtata* subsp. nov. (p. 3, pl. 1/7–9); *E. morgani* Cotteau, 1890 (p. 3, pls 1/10–13, 2/1–3, text fig. 2); *E. ovulum* Laube, 1869 (p. 4, pl. 2/4–8, text fig. 3); *E. gambierensis* Tenison Woods, 1867 (p. 6, pl. 3/1–7, text fig. 4); *E. tatei* Lambert, 1898 (p. 7, pl. 3/8–11); *E. aff. tatei* Lambert, 1898 (p. 8, pl. 4/1–3); *E. gregori* gregori sp. nov. (p. 8, pl. 4/4–6); *E. gregori corrugata* subsp. nov. (p. 8, pl. 4/7–9). Discusses ontogeny of *Echinolampas* (pp. 10–12).
- McNamara, K. J. and Philip, G. M., 1984. A revision of the spatangoid echinoid *Pericosmus* from the Tertiary of Australia. *Records of the Western Australian Museum* 11(4): 319–356.
- Describes and figures *Pericosmus compressus* (Duncan, 1877), p. 321, figs 1–4; *P. maccoyi* Gregory, 1890 (p. 326, figs 5–6); *P. celsus* sp. nov. (p. 329, figs 7–9); *P. quasimodo* sp. nov. (p. 332, figs 10–13); *P. torus* sp. nov. (p. 336, figs 14–16); *P. sp. 'A'* (p. 339, fig. 17); *P. sp. 'B'* (p. 341, fig. 18). Erects new genus *Waurnia* and describes and figures *Waurnia nelsoni* (McCoy, 1882), p. 342, figs 20–23; describes and figures *Victoriaster gigas* (McCoy, 1882), p. 347, figs 24–27. Discusses phylogenetic relationships of Australian species of *Pericosmus*.
- McNamara, K. J., Philip, G. M. and Kruse, P. D., 1986. Tertiary brissid echinoids of southern Australia. *Alcheringa* 10(1): 55–84.
- Describes and figures *Brissus fosteri* sp. nov. (p. 56, figs 1–3, 4A); *Brissopsis tatei* Hall, 1907 (p. 59, figs 4B–C, 5, 6); *B. australis* sp. nov. (p. 63, fig. 7A–E); *B. praeluzonica* Fell, 1964b (p. 63, fig. 7F–K); *Cyclaster archeri* (Tenison Woods, 1867), p. 65, figs 8–9; *Gillechinus cudmorei* Fell, 1964a (p. 69, figs 10–11); *Granobrissoidea australiae* (Cotteau, 1889), p. 73, fig. 12; *Meoma tuberculata* Hutton, 1973 (p. 76, figs 13, 14, 15A–B, 17A–C); *Spatagobrissus laubei* (Duncan, 1877), p. 79, figs 15C–G, 16, 17D–H.
- McWhae, J. R. H., Playford, P. E., Lindner, A. W., Glenister, B. F. and Balme, B. E., 1958. The stratigraphy of Western Australia. *Journal of the Geological Society of Australia* 4(2): 1–161 + map.
- Notes echinoids occur in the Tulki Limestone (p. 125); Trealla Limestone (p. 126); Wadera Calcarene (p. 127); Pirie Calcarene - *Cardiaster*, *Cidaris*, *Holaster* (p. 127); Merlinleigh Sandstone (p. 129); Plantagenet Beds (p. 131); Norseman Limestone - spines (p. 132); Wilson Bluff Limestone (p. 134). Also refers to the Upper Eocene age of the Wilson Bluff Limestone fauna being established by Glaessner (1953) on the basis of the echinoid *Australanthus longianus*, the pelecypod *Notostrea lubra* and



- a number of characteristic Foraminifera (p. 135).
- Milnes, A. R., Ludbrook, N. H., Lindsay, J. M. and Cooper, B. J., 1983. The succession of Cainozoic marine sediments on Kangaroo Island, South Australia. *Transactions of the Royal Society of South Australia* 107(1): 1–35.
- Includes record of echinoids noted by Tate, Howchin and Chapman in cliff sections at Kingscote [Notes reference to presence of *Echinolampas gambierensis* no longer valid], pp. 7–8. Other references to echinoids, including *Monostychia australis*, in Oligocene beds (pp. 15, 18–19). Describes the Kingscote Limestone, a new Late Eocene–Late Oligocene stratigraphic unit exposed between the jetty at Beare Point and Brownlow Beach, Kingscote [previously considered to be Late Eocene].
- Mitchell, J., 1897. On the occurrence of the genus *Palaechinus* in the Upper Silurian rocks of New South Wales. *The Proceedings of the Linnean Society of New South Wales for the year 1897*, 22(2): 258–259.
- Describes and figures a test fragment of *Palaechinus* sp. from the Middle Trilobite Bed (? Wenlock) at Bowring, New South Wales. [Note: Brown (1964) considers the specimen could be portion of a cystoid]
- Mooi, R., 1989. Living and fossil genera of the Clypeasteroidea (Echinoidea: Echinodermata): An illustrated key and annotated checklist. *Smithsonian Contributions to Zoology* 488: iii + 51 pp.
- Presents an illustrated key to living and fossil genera based on characteristics of both the test and external structures (pp. 3–33) and an annotated checklist (pp. 34–44). Genera recorded in the Australian fossil record [although not always specifically noted in text] are: *Clypeaster* (pp. 5, 34); *Ammotrochus* (pp. 6, 34); *Monostychia* (pp. 6, 35, figs 1b, 5); *Fellaster* (pp. 9, 34); *Scutellinoides* (pp. 9, 35, fig. 5e); *Fossulaster* (pp. 9, 34); *Willungaster* (pp. 9, 35, fig. 5f); *Peronella* (pp. 21, 37); *Lenu yamtida* (pp. 21, 36, fig. 22a); *Sismondia* (pp. 22, 38); *Fibularia* (pp. 23, 35); *Cyamida* (pp. 23, 35); *Echinocyamus* (pp. 23, 35). Includes illustrated glossary (pp. 44–49).
- Mortensen, T., 1904. The Danish expedition to Siam 1899–1900, 2. Echinoidea 1. *Kongelige Danske Videnskabernes Selskabs Skrifter* 7(1): 1–124, pls 1–7.
- Describes and figures *Microcyphus annulatus* sp. nov. (p. 101, pls 5/17, 6/15, 29, 31) an extant species subsequently recorded from the Roe Calcarenite, Western Australia (Foster and Philip, 1980).
- Mortensen, T., 1928a. Papers from Dr Th. Mortensen's Pacific Expedition 1914–1916. 44. New Cidaridae (preliminary notice). *Videnskabelige Meddelelser fra Dansk naturhistorisk Forening i København* 85: 65–74.
- Describes *Phyllacanthus irregularis* sp. nov. (p. 74), an extant species subsequently recorded as a fossil from the Tamara Limestone at Cape Burney, Western Australia (McNamara, 1992).
- Mortensen, T., 1928b. *A monograph of the Echinoidea 1. Cidaroida*. C. A. Reitzel, Copenhagen, 551 pp. + separate atlas (24 pp., 88 pls)
- Describes genera etc. known to occur in the Australian fossil record as follows: *Archaeocidaris* (p. 59), *Austrocidaris* (p. 140), *Gonocidaris* (p. 149), *Aspidocidaris* (p. 150), *Stereocidaris* (p. 225), *Stylocidaris* (p. 334), *Eucidaris* (p. 384), *Phyllacanthus* (p. 500) [Note: specific reference to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mortensen, T., 1935. *A monograph of the Echinoidea 2. Bothriocidaroida, Melonechinoida, Lepidocentroida and Stirodonta*. C. A. Reitzel, Copenhagen, 647 pp. + separate atlas (16 pp., 89 pls).
- Describes genera etc. known to occur in the Australian fossil record as follows: *Salenidia* (p. 347), *Coelopleurus* (p. 605). Refers to *Coelopleurus paucituberculatus* Gregory (pp. 608–609) [Note: specific reference to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mortensen, T., 1940. *A monograph of the Echinoidea 3(1). Aulodonta, with additions to Volume 2 (Lepidocentroida and Stirodonta)*. C. A. Reitzel, Copenhagen, 370 pp. + separate atlas (22 pp., 77 pls).
- Does not include any descriptions of genera etc. known to occur in the Australian fossil record.
- Mortensen, T., 1943a. *A monograph of the Echinoidea 3(2). Camarodonta 1. Orthopsidae, Glyphocyphidae, Temnopleuridae and Toxopneustidae*. C. A. Reitzel, Copenhagen, 553 pp. + separate atlas (23 pp., 56 pls).
- Describes genera etc. known to occur in the Australian fossil record as follows: *Amblypneustes* (p. 186), *Pseudechinus* (p. 223), *Paradoxechinus* (p. 350), *Grammechinus* (p. 374). Describes and figures *Amblypneustes formosus* Valenciennes (pp. 203–207, pls 13/8–16, 48/6, 14, 15, 23) *Pseudechinus albocinctus* Hutton (pp. 227–232, pl. 47/25, 31) Discusses and figures *Paradoxechinus novus* Laube, *P. lineatus* (Duncan), *P. pulchellus* (Bittner), pp. 350–351, text fig. 210a–d. [Note: specific reference to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mortensen, T., 1943b. *A monograph of the Echinoidea 3(3). Camarodonta 2. Echinidae, Strongylocentrotidae, Parasalenidae and Echinometridae*. C. A. Reitzel, Copenhagen, 446 pp. + separate atlas (23 pp., 66 pls).
- Describes genera etc. known to occur in the Australian fossil record as follows: *Strongylocentrotus* (p. 193), *Evechinus* (p. 297), *Helicodaris* (p. 335), *Zenocentrotus* (p. 400). [Note: specific reference to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mortensen, T., 1948a. *A monograph of the Echinoidea 4(1). Holectypoida, Cassiduloida*. C. A. Reitzel, Copenhagen, 371 pp., 14 pls.
- Describes genera etc. known to occur in the Australian fossil record as follows: *Echinoneus* (pp. 71–80), *Galeraster* (pp. 83–84), *Pygorhynchus* (pp. 141–143), *Echinobrissus* (Subgenus *Nucleolites*), pp. 175–178, *Apatopygus* [only reference to recent species, pp. 179–185], *Cassidulus* (pp. 198–205), *Proccassidulus* [includes *Australanthus*] pp. 220–223, *Studeria* (pp. 233–237), *Eurhodia* (pp. 252–254), *Echinolampas* (pp. 270–275). Figures *Galeraster australiae* (fig. 62a–c), *Australanthus longianus* (fig. 200a–b); *Studeria elegans* (fig. 217a–b). [Note: specific references to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mortensen, T., 1948b. *A monograph of the Echinoidea 4(2). Clypeastroida, Clypeastridae, Arachnoididae, Fibulariidae, Laganidae and Scutellidae*. C. A. Reitzel, Copenhagen, 471 pp. + separate atlas (20 pp., 72 pls).
- Describes genera etc. known to occur in the Australian fossil record as follows: *Clypeaster* [only reference to recent species, *C. australis*, pp. 79–83], *Monostychia* (pp. 154–155), *Echinocyamus planissimus* H. L. Clark (p. 194), *Fibularia* (pp. 203–207), *Scutellina* (pp. 229–230), *Sismondia* (pp. 234–236), *Peronella orbicularis* (Leske), pp. 286–289. Figures *Monostychia australis* (fig. 91a), *M. australis* var. *Loveni* (figs 91b–c, 92a–b), *M. australis* var. *elongata* (fig. 93a–d) [Note: specific reference to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mortensen, T., 1950. *A monograph of the Echinoidea 5(1). Spatangoida 1. Protosternata, Meriodosternata, Amphisternata 1. Palaeopneustidae, Palaeostomariidae, Aeropsidae, Toxasteridae, Mucrosteridae, Hemisteridae*. C. A. Reitzel, Copenhagen, 432 pp., 25 pls.
- Describes genera etc. known to occur in the Australian fossil record as follows: *Duncanaster* (p. 74, text fig. 66a–b), *Hemister* (pp. 378–386). Monograph includes genus *Echinocorys*, not described from Australia until 1978. [Note: specific reference to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mortensen, T., 1951. *A monograph of the Echinoidea 5(2). Spatangoida 2. Amphisternata 2. Spatangidae, Loveniidae, Pericostomidae, Schizasteridae, Brissidae*. C. A. Reitzel, Copenhagen, 593 pp. + separate atlas (30 pp., 64 pls).
- Describes genera etc. known to occur in the Australian fossil record as follows: *Marettia* (pp. 21–27), *Lovenia* (pp. 89–97), *Pericostomus* (pp. 169–175), *Protenaster* (pp. 223–226), *Prenaster* (pp. 229–230), *Linthia* (pp. 233–236), *Schizaster* (pp. 295–300), *Granobrissoides* (pp. 367–368), *Brissopsis* (pp. 371–380), *Cyclaster* (pp. 441–443), *Eupatagus* (pp. 456–465), *Spatagobrissus* (p. 492), *Brissus* (pp. 505–509) and *Meoma* (pp. 524–526). [Note: specific references to Australian species or occurrence of these genera in the Australian fossil record is not necessarily mentioned in the Monograph].
- Mulder, J. F., 1893. [List of fossils found at Airey's Inlet.] In a report by J. Hammerton et al., The Xmas camp at Airey's Inlet. *The Geelong Naturalist* 2(8): 2–7.
- Lists *Echinobrissus* (new species), *Lovenia forbesi*, *Monostychia woodsianna* [nomen nudum], *Holaster australis*, *Eupatagus murrayanus*, *Eupatagus* sp. (new species), p. 3.



- Mulder, J. F., 1896. The Eocene deposits of Corio Bay. *The Geelong Naturalist* (series 1) 6(1): 12–17.
- Schedules *Scutellina patella* as occurring at Western Beach (Geelong), Muddy Creek and Spring Creek (p. 17).
- Mulder, J. F., 1914. Notes on the Waurin Ponds limestone fossil beds. *The Geelong Naturalist* (series 2) 6(1): 23–26.
- Lists the following echinoids from the Waurin Ponds quarries about seven miles S.W. of Geelong (p. 25): *Pericosmus* ? *gigas* var., *Psammechinus woodsi* (Laube), *Scutellina patella* (Tate), *Echinobrissus australis* (Duncan), *Cassidulus florescens* (Gregory), *Echinolampas posterocrassa* (Gregory), *Holaster australis* (Gregory), *Lovenia forbesi* (T. Woods), *Pericosmus nelsoni* (McCoy), *Linthia antiaustralis* (Tate), *Cyclaster archeri* (T. Woods), *Eupatagus murrayensis* and *E. sp.* (?) (Laube), *E. rotundus* (Duncan), *Clypeaster gippslandicus*. [Note: the occurrence of some of these fossils at Waurin Ponds cannot be verified, although their occurrence in the general area of Geelong has been recorded elsewhere.]
- Murray, R. A. F., 1887. *Victoria, Geological and physical geography* (first edition). Government Printer: Melbourne. IV + 179 pp., geological sketch map, sections and sketches.
- In "Table of colours and explanation", relating to the geological sketch map, includes *Lovenia forbesi* and *Monostychia australis* as Upper Tertiary (Pliocene) and *Clypeaster gippslandicus* as Middle Tertiary (Miocene) fossils (p. 14). Refers to '*Spatangus*' *forbesi* as a common fossil in coastal cliffs near Spring Creek, Torquay (p. 103) and to Miocene fossils (incl. echinoids) figured and described by McCoy in the Prodrum of Victorian Palaeontology (p. 108).
- Murray, J. W., 1985. Class Echinoidea (Ordovician-Recent). Pp. 182–190 in J. W. Murray (ed.), *Atlas of Invertebrate Macrofossils*. Longman Group Limited and The Palaeontological Association, London.
- Gives brief description of the genus *Lovenia* Desor, 1847, accompanied by illustrations of *Lovenia forbesi* Tenison Woods and Duncan [noted as 'Eocene age from Murray River, Victoria, Australia'], pp. 189–190, pl. 7.9.23A–C. [Note: figured specimen is clearly *Lovenia woodsi* (Etheridge, 1875) not *L. forbesii*]
- Neaverson, E., 1955. *Stratigraphical Palaeontology: A study of ancient life-provinces* (second edition). Oxford University Press: London. xii + 806 pp., 18 pls [Note: first edition (Macmillan and Co. Ltd, 1928) not listed in this bibliography]
- In the chapter "The Later Neozoic Faunas" discusses the relationship of Australian echinoid faunas with other similar faunas in the Indo Pacific region (pp. 643–644).
- Nye, P. B., 1941. The lower Tertiary (Miocene) marine sedimentary rocks of the far north-western districts of Tasmania. *Papers and Proceedings of the Royal Society of Tasmania for the year 1940*: 11–17.
- Refers to Johnston recording *Lovenia forbesi* in polyzoal limestone 10 miles S. of Cape Grim (p. 12). Appendix notes *Linthia* sp. from Marrawah near Smithton (identified by F. Chapman), p. 16.
- Philip, G. M., 1957. Interambulacral plate atrophy in *Lovenia woodsi* (Etheridge Fil.). *Geological Magazine* 94(5): 402–408
- Defines plate atrophy (used in preference to "plate crushing") in *Lovenia woodsi* (p. 402).
- Philip, G. M., 1962. The palaeontology and stratigraphy of the Siluro-Devonian sediments of the Tyers area, Gippsland, Victoria. *Proceedings of the Royal Society of Victoria* 75: 123–246, pls 11–36.
- Includes table interpreting fauna from the Tyers area figured by Chapman (1907). Notes the original specimens could not be found, consequently, based solely on Chapman's photographs, the presence of ? *Palaeochinus* spines is queried (p. 126).
- Philip, G. M., 1963a. The Tertiary echinoids of south-eastern Australia 1. Introduction and Cidaridae (1). *Proceedings of the Royal Society of Victoria* 76(2): 181–226, pls 21–26
- Includes historical account (p. 184) and extensive bibliography (p. 219). Describes and figures *Stylocidaris* (?) *scoparia* (Chapman and Cudmore), p. 195, pl. 21/1–2, 4–8, text figs 1a, 2b; *S. (?) sp. cf. S. (?) scorparia* (Chapman and Cudmore), p. 198, pl. 21/3; *S. (?) chapmani* sp. nov. (p. 198, pl. 22/6–8, text figs 1b–c, 2a); *Eucidaris strombilata fellii* subsp. nov. (p. 202, pl. 22/1–2, 5, 9); *Phyllacanthus duncani duncani* (Chapman and Cudmore), p. 209, pls 22/3–4, 23/1, 3–4, 6, 9, 12, 14, 24/514, text fig. 3; *P. d. gambierensis* subsp. nov. (p. 213, pls 23/2, 10, 24/1–3, text fig. 4); *P. clarki clarki* (Chapman and Cudmore), p. 214, pls 25/3, 5, 8, 26/1, 3–4, 6–8, text figs 2c–d, 5a–b, d–e; *P. c. impensus* subsp. nov. (p. 217, pls 25/9–10, 26/2, 5, 9, text fig. 5c) and *P. serratus* sp. nov. (p. 219, pl. 25/1–2, 4, text fig. 2e).
- Philip, G. M., 1963b. Two Australian Tertiary neolampadids, and the classification of cassiduloid echinoids. *Palaeontology* 6(4): 718–726, pls 106–107.
- Describes and figures *Pisolampas concinna* gen. et sp. nov. (p. 719, pls 106/1–10, 107/11, text fig. 1) from Aldinga; *Notolampas flosculus* gen. et sp. nov. (p. 720, pl. 107/1–10, text fig. 2) from Mannum
- Philip, G. M., 1963c. Silurian echinoid pedicellariae from New South Wales. *Nature* 200 (4913): 1334.
- Records eight three-valved typical tridentate pedicellariae, associated with the mold of an imbricate lepidocentroid echinoid, in rocks of Silurian (Ludlovian) age from Vallance's Hill, south-east of Yass, New South Wales.
- Philip, G. M., 1964. The Tertiary echinoids of south-eastern Australia 2. Cidaridae (2). *Proceedings of the Royal Society of Victoria* 77: 433–477, pls 58–67.
- Describes and figures *Stereocidaris australiae* (Duncan), p. 437, pl. 58/1–5, text fig. 2a, d, g, h; *S. cudmorei* sp. nov. (p. 440, pl. 60, text fig. 1a, d, j, j); *S. fosteri* sp. nov. (p. 441, pl. 59/6, 65/3, text fig. 1f–g); *S. inermis* sp. nov. (p. 442, pl. 59/1–3, 7–8, text fig. 2b–c, e–f); *S. (?) hispida* sp. nov. (p. 444, pl. 61/8–9, text fig. 1h); *S. (?) intricata* sp. nov. (p. 446, pl. 59/4, text fig. 1e); *S. sp. A* (p. 447, pls 61/2–3, 62/4–5, 65/2), *S. sp. B* (p. 448, pl. 64/7, 9–11); *S. sp. C* (p. 449, pl. 64/3, 8); *Goniocidaris murrayensis* Chapman and Cudmore (p. 453, pls 62/2–3, 6–12, 64/5–6, 66/4, 6–7, 9–12, text fig. 4a–f); *G. praecipua* sp. nov. (p. 455, pl. 61/10–12, text fig. 4i, k, m); *G. tubaria hallettensis* nom. nov. (p. 458, pls 66/1–2, 12, 67/4–6, text fig. 4g, j, l); *G. (?) pentaspinosus* Chapman and Cudmore (p. 460, pl. 65/1, 4–16, text fig. 4h); *Austrocidaris operta* sp. nov. (p. 463, pls 61/5–6, 64/1–4, 8, text fig. 5d, e); *Delocidaris prunispinosa* (Chapman and Cudmore), p. 466, pls 58/6–9, 63, text fig. 5a–c, f; *Menocidaris compta* sp. nov. (p. 469, pls 59/5, 61/1, 67/1, text fig. 6), and sundry cidarid fragments (corona sp. 1 and radiolus sp. 1–7).
- Philip, G. M., 1965a. Classification of echinoids. *Journal of Paleontology* 39(1): 45–62.
- No specific references to Australian echinoids.
- Philip, G. M., 1965b. The Tertiary echinoids of south-eastern Australia 3. Stirodonta, Aulodonta and Camarodonta (1). *Proceedings of the Royal Society of Victoria* 78(2): 181–196, pls 26–29.
- Describes and figures *Salendia tertaria* (Tate), p. 182, pl. 26/10–15, text fig. 2a–b; *Muravechinus* gen. nov., type species *M. paucituberculatus* (Gregory), p. 186, pl. 26/1–9, text fig. 2c–d, f–g; *Diademata* gen. et sp. indet. (p. 187, text fig. 2e); *Toxopneustidae* gen. et sp. indet. (p. 187, pl. 29/4–5); *Strongylocentrotus antiquus* sp. nov. (p. 189, pl. 29/1–3, text fig. 3, 4a, d); *S. (?) sp.* (p. 191, pl. 29/8); *Heliocidaris ludbrookae* sp. nov. (p. 192, pls 27/1–4, 28/1–2, text fig. 4c); *Zenocentrotus peregrinus* sp. nov. (p. 194, pls 28/3–6, 29/6, 9, text fig. 4b).
- Philip, G. M., 1966. Notes on three recently proposed Australian Tertiary echinoid genera. *Proceedings of the Linnean Society of New South Wales* 91(2): 114–117.
- Considers *Gillechinus* Fell, 1964, a synonym of *Brissopatagus* Cotteau, 1886 (p. 114); *Irenechinus* Fell, 1964, a synonym of *Ortholophus* Duncan, 1887, with *Brochopleurus australiae* Fell = *Ortholophus woodsi* (Laube) and *Irenechinus hentyi* Fell = *Ortholophus pulchellus* (Bittner), pp. 115–116. Comments on *Leucyamida* Brunnenschweiler, 1962 (p. 116, fig. 1).
- Philip, G. M., 1969. The Tertiary echinoids of south-eastern Australia 4. Camarodonta (2). *Proceedings of the Royal Society of Victoria* 82(2): 233–275, pls 3–16.
- Describes and figures *Evechinus palatus* sp. nov. (p. 234, pl. 16/1–6); *Cryptechinus humilior* (Bittner), p. 237, pls 3/1–9, 4/1–6, text fig. 1a–k; *Asaphechinus murrayensis* sp. nov. (p. 242, pls 5/1–4, 6–7, 12, 12/5, text fig. 2a–c, e–g); *A. princeps* sp. nov. (p. 243, pls 5/8–10, 12/5, 14/1–3, text fig. 3c, e, g); *A. singletoni* sp. nov. (p. 244, pls 6/1–4, 8, 12, 12/3–4, 7, 13/4, text fig. 3a–b, d, f, h, i); *A. tasmanensis* sp. nov. (p. 247, pls 6/5–7, 15/2, text fig. 8g, h, j); *Grammichinus meridionalis* sp. nov. (p. 249, pls 4/10–13, 14/5–6, text fig. 2h); *Ortholophus lineatus* (Duncan), p. 252, pls 7/14–18, 9/10, 12/6, text fig. 5g, i; *O. butneri* nom. nov. (p. 253, pls 11/13–21, 13/2–3, 5–7, text fig. 6c, e, i–j); *O. morganensis* sp. nov. (p. 255, pl. 7/1–13, text fig. 6a–b, h); *O. pulchellus* (Bittner), p. 257, pls 10/1–14, 15/1, text fig. 5f, j–k; *O. venustus* sp. nov. (p. 259, pl. 9/1–7, 9, 11–14, text fig. 6d, f, g); *O. woodsi* (Laube, p. 260, pls 8/1–16, 12/2, 13/1, 14/4, 15/3, 5, text fig. 5a–e, h); *Ortholophus* spp. indet. (p. 262); *Paradoxechinus novus* Laube (p. 263, pls 11/1–12, 12/1, text fig. 7); *Pseudechinus* sp. cf. *P. albocinctus* (Hutton),



- p. 268, pl. 9/8, 15, text fig. 2d; *Tatechinus nudus* sp. nov. (p. 269, pls 4/7-9, 14-15, 14/7, 15/4, text fig. 8a-f, i); *Radiolus* sp. indet. (p. 271, pl. 5/11).
- Philip, G. M., 1970. Appendix 1 - Tertiary echinoids from the Eucla Basin. Pp. 182-191, pl. 5 in D. C. Lowry, Geology of the Western Australian part of the Eucla Basin. *Bulletin of the Geological Survey of Western Australia* 122.
- Notes sequence of echinoid faunas in southeastern Australia and lists 20 described species occurring in the Upper Eocene Tortachilla Limestone of the St Vincent basin (p. 183); schedules 35 echinoid species from various localities in the Wilson Bluff, Toolinna and Abrakurrie Limestones including several new unnamed species (pl. 5); schedules 5 species from the Colville Sandstone and Nullarbor Limestone including *Monostychia* cf. *australis* Laube and *Monostychia* sp. nov. (p. 186) Figures *Ortholophus woodsi* (Laube), *Salinida tertiaria* (Tate), *Lovenia forbesi* (T. Woods), *Brissopatus cudmorei* (Fell), fig. 56, p. 188, *Eupatagus* sp. nov., *Paradoxechinus* sp. nov. cf. *novus* Laube, *Brissopatus cudmorei* (Fell), fig. 57, p. 189; "*Duncanaster*" *australiae* (Duncan), *Australanthus longianus* (Gregory), *Eupatagus* sp. nov. (fig. 58, p. 190); *Monostychia australis* Laube (fig. 59, p. 191). [Note: new (unnamed) species referred to in this paper are recorded at the end of the 'List of genera and species']
- Philip, G. M., 1971. A re-assessment of the Tertiary echinoid genus *Gontosigma* Fell 1964. *Proceedings of the Royal Society of Victoria* 84(2): 227-228, pl. 12.
- Describes and figures the holotype of *Gontosigma* Fell, 1964 (= *Echinus enysi* Hutton, 1873), p. 227, pl. 12; transfers Australian Tertiary temno-pleurid species *Asaphechinus murrayensis* Philip, 1969, *A. princeps* Philip, 1969, *A. singletoni* Philip, 1969 and *A. tasmanensis* Philip, 1969, to the genus *Gontosigma* (p. 228).
- Philip, G. M., 1978. A Carboniferous echinoid *Archaeocidaris* sp. indet. from New South Wales. *Journal and Proceedings of the Royal Society of New South Wales* 111: 33-34.
- Describes and figures *Archaeocidaris* sp. indet. from the *Rhipidomella formuscula* Zone of Early Carboniferous (Late Visean) age at Mt Breakneck, Carrow Brook district, southern New England, N.S.W. (p. 33, figs 1-3).
- Philip, G. M. and Foster, R. J., 1970. The sequence of echinoid faunas in the Cainozoic of south-eastern Australia. *Australian and New Zealand Association for the Advancement of Science, 42nd Congress, Port Moresby*. Abstracts, Section 3, 2 pp.
- Divides Upper Eocene to Pliocene into seven "zones" based on commonly occurring echinoids.
- Philip, G. M. and Foster, R. J., 1971. Marsupiate Tertiary echinoids from south-eastern Australia and their zoogeographic significance. *Palaeontology* 14(4): 666-695, pls 124-134.
- Describes and figures *Paradoxechinus novus* Laube (p. 672, pls 125/1, 2, 126/1, 127/1, 129/7, 12-13, 17, text figs 1, 2); *P. granulatus* sp. nov. (p. 674, pl. 129/4-5, 9-10, 18, 19, 134/3); *P. profundus* sp. nov. (p. 676, pls 128/1, 129/8, 134/2); *P. stellatus* sp. nov. (p. 677, pls 126/2, 129/16, 20-23, 134/1); *Pentechinus mirabilis* gen. et sp. nov. (p. 678, pls 124, 129/1, 3, 11, 15, text figs 3, 4); *Fossulaster halli* Lambert and Thiéry (p. 682, pls 125/3, 127/3, 130/1-10, 131/6, 132/10, text figs 5, 6); *F. exiguus* sp. nov. (p. 686, pls 128/3, 132/2-3, 6, 8-9, 11, text fig. 7); *Willungaster scutellaris* gen. et sp. nov. (p. 688, pls 127/2, 131/1-5, 133/7, 9, text fig. 8); *Peraspatangus brevis* gen. et sp. nov. (p. 690, pls 126/3, 133/1, 2, 4, 6, 8, text fig. 9b-d); *P. depressus* sp. nov. (p. 692, pls 128/2, 132/1, 4-5, 133/3, text fig. 9a). [Note: Philip and Foster do not consider *Scutellina patella* Tate 1891 (type species of *Scutellinoides* Durham, 1955) and *Scutellina morgani* Cotteau, 1891, are congeneric, as assumed by Durham when erecting and placing the genus in the family Arachnoididae. In this paper Philip and Foster place the genera *Scutellinoides*, *Fossulaster* and *Willungaster* in a new family, *Fossulasteridae* (p. 681).]
- Playford, P. E., Cockbain, A. E. and Low, G. H., 1976. Geology of the Perth Basin, Western Australia. *Geological Survey of Western Australia Bulletin* 124: 1-311.
- Records in tables of fossils, *Cidaris* sp. from the Newmarracarra Limestone (p. 155); *Cidaris comptoni* Glauret, cf. *Hemiasper* sp. and cf. *Holaster* sp. from the Gin Gin Chalk (p. 189).
- Playford, P. E., Cope, R. N., Cockrain, A. E., Low, G. H. and Lowry, D. C., 1975. Phanerozoic. In The Geology of Western Australia. *Geological Survey of Western Australia, Memoir* 2: 223-433.
- Notes echinoids present in the Boongerooda Greensand, Wadera Calcarenite and Pirie Calcarenite (p. 300); Cashin Calcarenite and Merlinoigh Sandstone (p. 301), Trealla Limestone (p. 303); Carbla Oolite (p. 307); Nanarup Limestone of the Wenllup Formation (p. 430). Refers to *Australanthus longianus* occurring in the Wilson Bluff Limestone (p. 413); *Lovenia forbesi* in the Abrakurrie Limestone (p. 415); *Monostychia australis* in the Colville Sandstone (p. 416).
- Pledge, N. S., 1985. An Early Pliocene shark tooth assemblage in South Australia. Pp. 287-297 in J. M. Lindsay, (ed.), *Stratigraphy, palaeontology, malacology: papers in honour of Dr Nell Ludbrook. Department of Mines and Energy, South Australia, Special Publication* 5.
- Records *Cidaroida* indet, *Lovenia woodsi*, and *Monostychia* sp. indet. from the Sunlands fossil assemblage, Early Pliocene Loxton Sands, Murray Basin, South Australia (p. 288). Figures cidaroid spine and *Lovenia woodsi* (pl. 2/h-j).
- Pledge, N. S. and Sadler, T., 1990. A new subspecies of the sea urchin *Peronella lesueuri* from the Quaternary of South Australia. *Transactions of the Royal Society of South Australia* 114(2): 103-104.
- Describes and figures *Peronella lesueuri augusta* subsp. nov. from Quaternary silty clay at Port Augusta, South Australia (p. 103, fig. 1a-b).
- Pomel, A., 1883. *Classification méthodique et genera des échinoides vivants et fossiles*. Adolphe Jourdan, Alger, 131 pp., 36 pls (French).
- Refers *Lovenia forbesi* to the genus *Sarsella* Pomel (p. 28); notes *Protenaster australis* (a Recent species), p. 37; refers *Rhynchopygus dysasteroides* Duncan to the genus *Corystus* Pomel (pp. 61-62); notes *Catopygus elegans* Laube (p. 64); *Monostychia australis* Laube, *M. laubei*, *M. loveni* and *M. elongatus* (Duncan sub. *Arachnoides*), pp. 69-70; *Paradoxechinus* Laube (p. 86); erects a new genus *Pleurosalenia* in which he includes *Salenia tertiaria* Tate, 1877 (p. 94).
- Pritchard, G. B., 1892. Remarks on the Tertiaries of Australia. *Annual Report of the South Australian School of Mines and Industries for 1891*: 171-206.
- Includes in "Catalogue of Australian Older Tertiary mollusca and Pliocene species in South Australian School of Mines Museum (Revised and extended by Prof. R. Tate, Chairman of Museum Committee)" - "Miocene" echinoids (p. 177), 'Eocene' echinoids (pp. 185-186). [Note: Catalogue includes the manuscript names, *Monostychia deltoidalis* Tate, *M. patellus* Tate, *Laganum crassatnum* Tate, *L. platymodes* Tate.]
- Pritchard, G. B., 1896. A revision of the fossil fauna of the Table Cape Beds, Tasmania, with descriptions of the new species. *Proceedings of the Royal Society of Victoria* 8: 74-150.
- Includes in faunal list, with full bibliography, the echinoids *Conoclypeus rostratus*, *Lovenia forbesi* and *Cyclaster archeri* (pp. 143-144).
- Pritchard, G. B., 1908. On the occurrence of the genus *Linthia* in Victoria, with description of a new species. *Proceedings of the Royal Society of Victoria* 21(1): 392-400, pls 22-23.
- Describes and figures *Linthia moorabolensis* sp. nov. (p. 394, pls 22/1-2, 23/3-4); reassigns *Pericosmus gigas* McCoy, 1882, and *Pericosmus nelsoni* McCoy, 1882, to the genus *Linthia* (pp. 396, 399); comments on *Linthia annaustalis* Tate, 1891 (p. 397).
- Pritchard, G. B., 1924\*. The character and sequence of the Victorian Tertiaries. *Proceedings of the Pan-Pacific Science Congress, Australia, 1923* (Volume 1): 934-939. [\* date assumed on basis of printer's code as publication date of 'Proceedings' not stated]
- Refers to the presence of Echinoidea in the Janjukian and introduces the term "*Scutellina* Limestones" for one of at least seven beds outcropping in the section at the Torquay end of the sequence (p. 935).
- Pritchard, G. B., 1976. Geology of the Sandringham-Beaumaris Coastline. *The Victorian Naturalist* 93(1): 4-20.
- Notes and figures *Lovenia woodsi* (Etheridge) as one of the most common Beaumaris fossils (p. 20, text fig. 11). [Note: article is the second chapter of a manuscript written by Pritchard (1947) and contains an editor's introduction by T. A. Darragh]
- Quilty, P. G., 1972. The biostratigraphy of the Tasmanian marine Tertiary. *Papers and Proceedings of the Royal Society of Tasmania* 106: 25-44.
- Notes "several echinoids including *Monostychia australis* Laube and *Scutellinoides patella* (Tate)" occur in the middle section (100 feet) of the 140 feet thick Tertiary sediments at Cape Grim (p. 35).
- Quilty, P. G., 1974. Tertiary stratigraphy of Western Australia. *Journal of the Geological Society of Australia* 21(3): 301-318.
- Refers to *Conoclypeus westraliensis* Crespin, 1943, from the Cape Range



- (with note on subsequent synonymy) and *Phylacanthus duncani* Chapman and Cudmore, 1934 from the Eucla Basin (p. 303). Also refers to appendix on echinoids by Philip, in Lowry, 1972 (p. 304).
- Raggatt, H. G. and Crespin, I., 1955. Stratigraphy of Tertiary rocks between Torquay and Eastern View, Victoria. *Proceedings of the Royal Society of Victoria* 67(1): 75–142, pls 4–7, tables 1–16 [text fig. 7 (of 8) not on numbered page].  
Refers to abundant small echinoids in shelly calcilutite to calcarenite at Fishermans Steps (p. 97 - section 11); abundant echinoids in grey calcarenite at Dead Mans Gully (p. 99 - section 13); large echinoids in off white sandy calcarenite between Bird Rock and mouth of Jan Juc Creek (p. 100 - section 15); echinoids (common) in off white sandy calcarenite from Jan Juc Creek to Spring Creek (p. 103 - section 17); flat echinoids in calcarenite at Split Point opposite Table Rock, Airey Inlet (p. 105 - section 19).
- Reynolds, M. A., 1953. The Cainozoic succession of Maslin and Aldinga Bays, South Australia. *Transactions of the Royal Society of South Australia* 76: 114–140.  
Lists echinoid faunas from Tortachilla Limestone- Polyzoal Limestone (p. 123); Blanche Point Glauconitic Limestone (p. 124); Port Willunga Beds (p. 129); Pliocene Limestones (p. 131). Table II lists macrofossils with restricted range including six echinoids (p. 139).
- Ripper, D. T., 1975. Heywood 13 well completion report. *Mines Department, Victoria, Geological Survey Report 1975/4*: 1–25 + appendices.  
Numerous references to echinoid spines and plates in description of cores (see appendices).
- Roman, J., 1965. Morphologie et évolution des *Echinolampas* (Echinides Cassiduloides). *Mémoires du Muséum National d'Histoire Naturelle, Série C, Sciences de la Terre* 15: 1–341, pls 1–12 (French).  
Lists *Echinolampas gambierensis* Woods, 1867 and notes *E. ovulum* Laube, 1869 a synonym of *E. gambierensis* (p. 281); *E. morgani* Cotteau, 1890 (pp. 240–241, 291); *E. posterocrassa* Gregory, 1890 (pp. 240–241, 295); *E. tatei* Lambert, 1898 (pp. 250–251, 302); *E. westraliensis* Crespin, 1943 (*Conoclypus*), pp. 246–247, 304. Notes distribution and geologic age of *Echinolampas* in Australia (pp. 212–214, 219). Refers to the genera *Pisolampas* and *Notolampas* Philip (1963), p. 158.
- Rose, E. P. F. and Olver, J. B. S., 1980. Australian Jurassic echinoids and their biogeographical significance. Pp. 46–52 in M. Jangoux (ed.), *Echinoderms present and past* (Proceedings of the European Colloquium on Echinoderms, Brussels, 1979). A. A. Balkema, Rotterdam.  
Describes and figures an “irregular” echinoid from Bringo Railway Cutting, near Geraldton, Western Australia, which is identified as *Clypeus* cf. *michelini* (Wright, 1854), p. 48, pl. 1. An additional abraded natural cast from Fossil Hill, Newmarcarra, is similarly referred to this species (p. 49, pl. 2). A fragment of secondary (or small primary) spine shaft from Waggrakine, near Geraldton, is also described and figured (p. 49, pl. 3), and the club shaped spine, *Cidaritis* sp. Whitehouse, 1924, discussed.
- Rosengren, N., 1988. *Sites of geological and geomorphological significance on the coast of Port Phillip Bay, Victoria*. Ministry of Planning and Environment, Victoria, v + 124 pp.  
Refers to large numbers of *Lovenia forbesi* in beds about 3 m. above high water mark at Beaumaris cliffs (Keefer's Boatshed and Yacht Squadron fossil sites), pp. 81 and 83. [Note: *Lovenia* species present is *L. woodsii* not *L. forbesii*]
- Sadler T. and Pledge, N. S., 1985. The fossil sea urchin *Fellaster incisa* - an extension of range. *Transactions of the Royal Society of South Australia* 109(4): 175–176.  
Describes and figures *Fellaster incisa* (Tate, 1893) from the Norwest Bend Formation at Willowbank and Sunnyside Lookout, N. of Murray Bridge, South Australia.
- Sadler, T., Pledge, N. S. and Morris, B., 1983. Fossils of South Australia. Part 1: Sea urchins of the Murray River cliffs. Quoll Enterprises : Seaton, South Australia, xxx + 34 pp.  
Briefly describes and figures echinoid species from the Mannum Formation and Morgan Limestone
- Sherrard, K., 1952. The geology of the Nanima-Bedulluck district, near Yass, New South Wales. *Journal and Proceedings of the Royal Society of New South Wales* 85: 63–81, pl. 6.  
Describes and figures fragments of a crushed echinoid [unnamed] in sandstone of Silurian (Ludlovian) age from Vallance's Hill, south-east of Yass, New South Wales (p. 77, pl. 6/4).
- Singleton, F. A., 1923. The geology of Royal Park. *Pan-Pacific Science Congress (Australia) 1923 - Handbook for Melbourne Meeting*: 91–96 + map.  
Lists *Echinus* (*Psammechinus*) *woodsii* Laube sp. from the Lower Beds (Tertiary) of the Royal Park cutting, Melbourne, Vict. (p. 94).
- Singleton, F. A., 1924\*. The geology of Royal Park. Pp. 1626–1631 in G. Lightfoot (ed.), *Proceedings of the Pan-Pacific Science Congress Australia 1923*, volume 2. [\* date assumed on basis of printer's code as publication date of 'Proceedings' not stated.]  
Repeat of information in Singleton, F. A., 1923.
- Singleton, F. A., 1941. The Tertiary geology of Australia. *Proceedings of the Royal Society of Victoria* 53(1): 1–125.  
Refers to echinoids including *Salenia tertiaria* from Wilsons Bluff, W.A. (p. 15); *Lovenia 'forbesi'* and *Monostychia* cf. *australis* from Beaumaris, Vict. (p. 33); impure limestone (“echinoderm rock”) between Bird Rock and mouth of Spring Creek, Torquay, Vict. (p. 38). Notes reference by Tate to Middle and Lower Murravian ‘Series’ being rich in echinoderms (p. 43). Contains very extensive bibliography of papers on Australian Tertiary stratigraphy and palaeontology (pp. 87–118).
- Singleton, O. P., 1968. Otway Region. Pp. 117–131 in J. McAndrew and M. A. H. Marsden (eds), *Regional Guide to Victorian Geology* (first edition). Geology Department, University of Melbourne.  
Notes echinoid (unnamed) in Anglesea Sand (p. 120); *Monostychia australis*, *Cassidulus florescens*, and large *Lovenia forbesii* in the Point Addis Limestone (p. 121); *Duncanaster australiae*, smaller *Lovenia forbesii* and *Eupatagus murrayensis* and the absence of *Monostychia* and *Cassidulus* in the Jan Juc Marl (p. 121); *Scutellina patella* abundant in the Zeally Limestone (p. 122); *Eupatagus laubei* and *Schizaster sphenoides* with *Lovenia woodsii* common towards the top, in the Port Campbell Limestone (Rutledge Creek), p. 127. [Note: information repeated in O. P. Singleton, 1973.]
- Singleton, O. P., 1973. Mesozoic and Tertiary stratigraphy of the Otway region. Pp. 114–128 + map (fig1) in J. McAndrew and M. A. H. Marsden (eds), *Regional Guide to Victorian geology* (second edition). School of Geology, University of Melbourne.  
[Note: repeats information given in first edition (O. P. Singleton, 1968) but with different page numbers. To transcribe first edition page numbers to second edition - deduct 3.]
- Smith, A. B., 1984. *Echinoid Palaeobiology*. George Allen and Unwin : London. xii + 190 pp., fig. A1.  
Figures Australian marsupiate echinoids *Pentechinus mirabilis*, *Paradoxechinus novus*, *Peraspatangus brevis*, *Fossulaster halli* (p. 86, fig 3.40). Discusses Australian *Schizaster* lineage based on McNamara and Philip (1890), p. 108, fig. 5.1; Tertiary migration pathway between Australia and New Zealand based on the appearance of *Girahaster* spp., *Corystus*, *Evechinus*, and *Fellaster* (p. 131, fig. 6.3, table 6.2).
- Sprigg, R. C., 1952. The geology of the South-East Province, South Australia, with special reference to Quaternary coast-line migrations and modern beach development. *Department of Mines, Geological Survey of South Australia Bulletin* 29: 1–120, pls 1–13 + map.  
Notes *Lovenia forbesi* one of the characteristic fossils in the Gambier Limestone (p. 27).
- Stephens, T., 1870. Remarks on the geological structure of part of the north coast of Tasmania, with special reference to the Tertiary marine beds near Table Cape. *Monthly notices of Papers and Proceedings of the Royal Society of Tasmania for 1869*: 17–21.  
Refers to the “Echinida” from the Table Cape beds being represented by species of *Cidaritis* and *Spatangus* based on a collection of rocks and fossils presented to the Museum by a Mr Hainsworth (p. 20).
- Stirling, J., 1894. Notes on a recent classification of the older marine Tertiary beds of Victoria', *Geological Survey of Victoria, Progress Report* 8: 47–57.  
Lists, in a comprehensive schedule of fossils, echinoids occurring in the lower Tertiary beds of Victoria [which were referred to the Eocene by Prof. Tate], p. 50. Also includes general text references [\* Pritchard, 1892.]
- Stuart, W. J. Jnr, 1970. The Cainozoic stratigraphy of the eastern coastal area of Yorke Peninsula, South Australia. *Transactions of the Royal Society of South Australia* 94: 151–178, figs 2–4.



- Lists echinoids in the Muloowurtie Formation - *Fibularia gregata*, *Salenia tertiaria* and *Echinolampas* sp. (pp. 154–155); Quartoo Sand Member - *Fibularia gregata* and spines (p. 157); Rogue Formation - *Duncanaster* (p. 161); Port Vincent Limestone - echinoids in general with specific reference to *Lovenia woodsi* (p. 166). No reference to echinoids in the Hallet Cove Sandstone.
- Sturt, C., 1833. *Two expeditions into the interior of Southern Australia during the years 1828, 1829, 1830 and 1831, with observations on the soil, climate and general resources of the colony of New South Wales*, Volume 2. Smith, Elder and Co.: Cornhill, London, 271pp.
- Figures *Scutella* [= *Monostychia*], pl. 3/9; *Spatangus hoffmanni* [= *Lovenia*], pl. 3/10; *Echinus* [= '*Psammechinus*'], pl. 3/11.
- Talent, J. A., 1965. The Silurian and Early Devonian faunas of the Heathcote district, Victoria. *Geological Survey of Victoria, Memoir* 26: 1–55, pls 1–27.
- Notes and figures *Lepidocentroid* indet., a poorly preserved mould of an echinoid from the Mount Ida Formation (Early Devonian) at Redcastle, north of Heathcote, Victoria (p. 20, pl. 5/9).
- Tate, R., 1877. On new species of *Belemnites* and *Salenia* from the Middle Tertiaries of South Australia. *Quarterly Journal of the Geological Society of London* 33(2): 256–259.
- Lists Australian echinoderm genera known to Tate, but not previously recorded (p. 256); describes and figures *Salenia tertiaria* sp. nov. (pp. 258, 257, text fig. 2a–c).
- Tate, R., 1878. Anniversary Address. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia for 1877–1878* (volume 1): 11–47.
- Refers to "The Echini of Australia" (Woods, 1878) and remarks about the separation between Australian Tertiary and Recent echinoid faunas (pp. 28–29).
- Tate, R., 1879a. The Anniversary Address of the President. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia for 1878–1879*: xxxix–lxxv.
- Gives an outline of South Australian geology and compares number of fossil species, including echinoids, common to Upper Murravian and Muddy Creek Beds (p. liv); and Lower Aldinga Series and Upper Murravian/Muddy Creek Beds (p. lvii). Refers to *Lovenia forbesi*, *Monostychia australis* and *Clypeaster gippislandicus* from the Victorian Miocene (p. lxxv).
- Tate, R., 1879b. The natural history of the country around the head of the Great Australian Bight. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia for 1878–1879* (volume 2): 94–128.
- Notes, in "Geology of the Bunda Plateau", the occurrence at Wilson's Bluff of *Echinus woodsi* in a yellow polyzoal bed and *Salenia* and *Cidaris* in a white polyzoal bed (p. 108). A schedule of fossils obtained *in situ* at Wilson's Bluff lists *Cidaris australiae* Duncan, *Salenia tertiaria* Tate, *Echinus woodsi* Laube and *Eupatagus coranguinum* Tate (p. 109).
- Tate, R., 1883. The botany of Kangaroo Island. *Transactions and Proceedings and Report of the Royal Society of South Australia* 6: 116–171.
- Notes *Echinolampas gambierensis* (? – *E. posterocrassa*) a common fossil in bryozoal limestone cliffs at Roll's Point, Kingscote (p. 122).
- Tate, R., 1885a. Notes on the physical and geological features of the basin of the lower Murray River. *Transactions and Proceedings and Report of the Royal Society of South Australia* 7: 24–46, pl. 3.
- Refer section on "Palaeontology of the older Tertiary deposits" (pp. 35–41). Tate lists new echinoid species described by Laube (1869) and Duncan (1877), p. 37; notes *Clypeaster gippislandicus* McCoy from the Upper Murravian (p. 39); refers to *Catopygus elegans* occurring in an upper bed "about Mannum" (p. 39); lists 14 echinoid species from the Middle Murravian (p. 41); notes Lower Murravian occurrence of *Megalaster compressus* at Morundi, a few miles south of Blanchetown (p. 41). Numerous references to *Lovenia forbesii* throughout the paper.
- Tate, R., 1885b. Miscellaneous contributions to the Palaeontology of the older rocks of Australia. *Southern Science Record* 1 (n.s.): 1–5.
- Describes, but does not figure, *Fibularia gregata* sp. nov. (p. 4) and *Linthia antaustralis* sp. nov. (pp. 4–5).
- Tate, R., 1888. Census of the fauna of the Older Tertiary of Australia. *Journal and Proceedings of the Royal Society of New South Wales* 22: 240–253.
- Discusses relationships between Old Tertiary fauna and Recent fauna in southern and east temperate Australia with some references to echinoid genera (p. 243); lists Tertiary fossils common to Australia and New Zealand including echinoids *Cidaris australiae* (Duncan, 1877), *Echinus woodsi* Laube, 1869 and *Pericosmus compressus* McCoy, 1882 (pp. 246–247); lists 48 echinoid species from the Older Tertiary of Australia (pp. 251–252).
- Tate, R., 1890a. On the discovery of marine deposits of Pliocene age in Australia. *Transactions and Proceedings and Report of the Royal Society of South Australia* 13(2): 172–180. [Note: 'Contents' heading in journal "On the discovery of an older Pliocene Formation in South Australia"]
- Records echinoids (*Goniocidaris* sp., *Strongylocentrotus* sp.) etc. in a bore at Dry Creek, Adelaide, South Australia (p. 173).
- Tate, R., 1890b. The stratigraphical relations of the Tertiary Formations about Adelaide, with special reference to the Croydon bore. *Transactions and Proceedings and Report of the Royal Society of South Australia* 13(2): 180–184.
- Records *Laganum* and '*Echinus*' etc. at considerable depth (Older Pliocene) in the Croydon Bore, Adelaide, South Australia (p. 184).
- Tate, R., 1891. A bibliography and revised list of the described echinoids of the Australian Eocene, with descriptions of some new species. *Transactions and Proceedings and Report of the Royal Society of South Australia* 14(2): 270–282.
- Includes bibliography 1831–1890 (p. 270) and table of genera showing their geological range (p. 273); lists described species with synonymy and localities (p. 274); describes [but does not figure] *Cardiaster latecordatus* sp. nov. (p. 280); *Echinobrissus vincentinus* sp. nov. (p. 280); *Salenia globosa* sp. nov. (p. 279); *Scutellina patella* sp. nov. (p. 279) and *Schizaster abductus* sp. nov. (p. 281). Erects new species *Eupatagus decipiens* for *Pericosmus compressus* (Duncan) in Gregory, 1890 (p. 282).
- Tate, R., 1892. Critical remarks on A. Bittner's "Echiniden des Tertiars von Australien". *Transactions and Proceedings and Report of the Royal Society of South Australia* 15(2): 190–194.
- Author comments on Bittner's "forcible effort at species making" and reassigns some described species to other genera.
- Tate, R., 1893. Unrecorded genera of the older Tertiary fauna of Australia, including diagnoses of some new genera and species. *Journal and Proceedings of the Royal Society of New South Wales* 27: 167–197, pls 10–13.
- Describes and figures *Arachnoides incisa* sp. nov. (p. 192, pl. 13/3), *Laganum platymodes* sp. nov. (p. 193, pl. 13/4); *Sismondia murravica* sp. nov. (p. 193, pl. 13/5); *Conoclypeus rostratus* sp. nov. (p. 194, pl. 13/1). Also comments on the use of generic names *Coelopleurus*, *Paradoxechinus*, *Temnechinus*, *Scutellina*, *Monostychia*, *Arachnoides*, *Cardiaster*, *Cyclaster*, *Gualteria* (sic) and *Rhynchopygus*.
- Tate, R., 1898\*. A second supplement to a census of the fauna of the Older Tertiary of Australia. *Journal and Proceedings of the Royal Society of New South Wales* 31: 381–412, pls 19–20. [\* Journal cover shows 1897 as the publication date, however, other details indicate it was not printed until 1898]
- Includes note on the genus *Cidaris*, subgenus *Stereocidaris* (p. 411); comments that *Echinobrissus australiae* is a *Cassidulus* and *Scutellina* is a misprint for *Scutella* (p. 411); transfers *Conoclypeus rostratus* to the genus *Plesiolampas* [see subsequent change to *Echinolampas* in Lambert, 1898] and endorses Gregory's 1892 transfer of *Eupatagus decipiens* to the genus *Macropneustes* (p. 412).
- Tate, R. and Dennant, J., 1893. Correlation of the marine Tertiaries of Australia. Part 1., Victoria, with special notes on the Eocene beds at Spring Creek and at the mouth of the Gellibrand River. *Transactions and Proceedings and Report of the Royal Society of South Australia* 17(1): 203–226.
- Comments on presence of echinoids and includes, in table of fossils, a comparison of the echinoid fauna present at Spring Creek, Gellibrand, Camperdown, Muddy Creek and Mornington with brief references to some non-Victorian localities (pp. 225 and 226).
- Tate, R. and Dennant, J., 1895. Correlation of the marine Tertiaries of Australia. Part 2, Victoria (continued). Special notes on the Eocene beds at Cape Otway and River Aire, with general remarks. *Transactions of the Royal Society of South Australia* 19(1): 108–121.
- Includes table of fossils from Cape Otway, in which *Leiocidaris australiae* Duncan is the only echinoid listed (p. 115). Mentions echinoids in general from the Spring Creek section and adjacent areas [Jan Juc] but does not name any species (pp. 118–120).



- Tate, R. and Dennant, J., 1896. Correlation of the marine Tertiaries of Australia. Part 3., South Australia and Tasmania, with general remarks and appendices. *Transactions of the Royal Society of South Australia* 20(1): 118–148, pl. 2.
- Lists common fossils including *Laganum platymodes* from Hallets Cove (p. 121), and Port Willunga jetty (p. 123); includes palaeontology summary notes (p. 125); lists Eocene echinoids from Aldinga and Adelaide with occurrence at other localities (p. 130); lists Table Cape fossil echinoids (p. 132); includes echinoids in table of Lower Maude fossils collected by Dennant and Mulder (p. 146).
- Tepper, O., 1879. Introduction to the cliffs and rocks at Ardrossan, Yorke's Peninsula. *Transactions and Proceedings and Report of the Philosophical Society of Adelaide, South Australia* 2: 71–79.
- Refers to *Fibularia gregata* Tate [a nomen nudum] and abundant echinoderms occurring between Rogue's Point and Muloowurtie Point (p. 76). [Note: the species *Fibularia gregata* was not described by Tate until 1885].
- Termier, H. and Termier, G., 1953. Classe des échinides. Pp. 857–947 (French) in J. Piveteau (ed.), *Traité de Paléontologie*. Masson et Cie, Paris.
- In the section "Étude systématique", a brief description is given of most echinoid genera known at the time, with details of the author, date and time range. There are no references to specific names or geographic range, except where species are figured. No Australian species are illustrated, although the genus *Monostychia* is listed (p. 924).
- Thomas, G. A., 1965. An echinoid from the Lower Carboniferous of northwest Australia. *Proceedings of the Royal Society of Victoria* 79(1): 175–178, pl. 25.
- Describes and figures *Oligoporus* (?) sp. from the Septimus Limestone (? Early Visean), Mt Septimus, Bonaparte Gulf Basin, N.W. Australia (p. 176, pl. 25/1 2).
- Valenciennes, A., 1846. [Figures of echinoids]. In M. Abel du Petit-Thouars, *Voyage autour du monde sur la fregate la Vénus, pendant les années 1836–1839, Atlas de Zoologie*. Gide et Cie, Paris, 79 pls (French).
- Figures *Amblypneustes formosus* sp. nov. (Zoophytes pls 2/2, 2a–d), an extant species subsequently recorded as a fossil in 'marine' limestone, near Robe, South Australia and the Roe Calcaremite, near Madura, Western Australia (Foster and Philip 1980).
- Walker, C. A. and Ward, D. J., 1992. *Fossils* (Collins Eyewitness Handbooks). Collins Angus and Robertson Publishers Pty Limited, a division of Harper Collins Publishers (Australia) Pty Limited : Pymble, N.S.W. 320 pp.
- Briefly describes the genera *Coleopleurus*\*, with illustration of *Coleopleurus*\* *paucituberculatus* Gregory [= *Murrayechinus*], p. 179; and *Lovenia*, with illustration of *Lovenia forbesi* (Woods), p. 185. [\* incorrect spelling of the genus *Coelopleurus* A. Agassiz, 1840.]
- Webster, G. D. and Jell, P. A., 1992. Permian echinoderms from Western Australia. *Memoirs of the Queensland Museum* 32(1): 311–373.
- Records and figures *Cidaroid* indet. spine bases and fragmentary interambulacral plates from the type section of the Callythara Formation, Carnarvon Basin, W.A. (p. 369, fig. 31).
- Whatmough, R. J., 1982. The Cainozoic in the mid-north (6th. June 1982) with Mr Neville Alley. *Bulletin of the Field Geology Club of South Australia* 11(8): 7–11.
- Records *Lovenia forbesi* in creek bank near River Light, N. of Redbanks, South Australia. Also notes presence of other (unnamed) echinoids.
- White, M. E., 1990. *The nature of hidden worlds*. Reed Books Pty Ltd : Balgowlah, N.S.W. 256 pp.
- Illustrates an unnamed echinoid "from South Australia of Jurassic age" (p. 144) and *Lovenia forbesii* from Victoria (p. 201) [Note: the unnamed echinoid is clearly *Monostychia australis* of Early Miocene age; and *Lovenia forbesii* a specimen of *L. woodsii*].
- Whitehouse, F. W., 1924. Some Jurassic fossils from Western Australia. *Journal of the Royal Society of Western Australia* 11(1): 1–13, pls 1–2.
- Records and figures a spine of *Cidarid* sp. with other fossils collected at a watering stop on the Geraldton - Cue railway line [now referred to as the 'Bringo Railway Cutting'], 19 miles east of Geraldton (p. 1, pl. 1/a–b).
- Wilkins, R. W. T., 1963. Relationships between the Mitchellian, Cheltenhamian and Kalimnan Stages in the Australian Tertiary.
- Proceedings of the Royal Society of Victoria* 76: 35–59.
- Notes occurrence of *Clypeaster* in beds at Mississippi Creek road cutting (p. 42); McRae's Kiln, Toorloo Arm (p. 46); and with occasional *Arachnoides* at Toorloo Arm road cutting (p. 45). [No reference to echinoids in faunal list (Appendix)].
- Wilkinson, C. S., 1865. Report [relative to the Cape Otway country] dated 13th. March, 1865. Pp. 21–28 in *Geological Survey of Victoria, Report of the Director of the Geological Survey of Victoria for the period from June 1863 to September 1864, with appendices*. Parliamentary Papers 1864–1865.
- Notes echini spines and *Spatangus forbesii* from the upper beds at Spring Creek, Torquay (p. 23); and *Spatangus forbesii* from mouth of Curdie's Inlet (p. 24) [Note: reference to fossils "labelled No. 5" from Castle Cove, Victoria (p. 23), is presumably the locality referred to by Duncan (1877) when describing *Echinobrissus australiae* and *Rhynchopygus dysasteroides*].
- Woods J. E. Tenison, 1859. Remarks on a Tertiary deposit in South Australia. *Transactions of the Philosophical Institute of Victoria* 3: 85–94.
- Notes "The *Spatangus forbesii* occurs at both Portland and Mount Gambier" (p. 91).
- Woods, J. E. Tenison, 1860. On some Tertiary rocks in the Colony of South Australia. *Quarterly Journal of the Geological Society of London* 16(3): 253–260.
- Notes *Spatangus forbesii* and some echinoderms (*Eupatagus*, *Echinolampas* and *Clypeaster*) from S.E. South Australia (p. 256).
- Woods J. E. Tenison, 1862. *Geological observations in South Australia, principally in the district south east of Adelaide*. Longman, Green, Longman, Roberts and Green, London (H. T. Dwight, Melbourne, Victoria), xviii + 404 pp.
- Figures *Spatangus forbesii* from Mount Gambier (pp. 75, 83); '*Clypeaster*' and '*Echinolampas*' from Mt. Gambier (p. 77); spine of *Cidarid* from Mt. Gambier (p. 81); includes 6 genera of echinoids in a faunal list (p. 77), and refers to *Spatangus forbesii* from Portland (p. 121) [Note: figured '*Clypeaster*' is a *Monostychia*, and '*Echinolampas*' a *Cyclaster*].
- Woods, J. E. Tenison, 1865. On some Tertiary deposits in the Colony of Victoria, Australia. *Quarterly Journal of the Geological Society of London* 21(4): 389–394.
- Notes echinidae common at Mount Gambier, particularly *Echinolampas* and *Spatangus*, and rare at Hamilton (pp. 392–393). Also notes species differ between Mount Gambier and Hamilton.
- Woods, J. E. Tenison, 1867. The Tertiary rocks of South Australia, Part IV. - Fossil Echinidae. *Papers of the Adelaide Philosophical Society 1865–1866*: 2 pp, figs 1–3.
- Describes and figures *Echinolampas gambierensis* sp. nov. (fig. 1c) and *Hemipatagus archeri* sp. nov. (fig. 2a–d); figures *Hemipatagus forbesi* Woods and Duncan (fig. 3a–d) [Note: the drawing in fig. 3 is clearly that of *Lovenia woodsii* and not *L. forbesii* (refer Duncan, 1864).]
- Woods, J. E. Tenison, 1876. On some Tertiary fossils from Table Cape. *Papers and Proceedings and Report of the Royal Society of Tasmania for 1875*: 13–26, figs 1–4 (3 pls).
- Refers to *Hemipatagus forbesii* (Duncan), among fossils in the Museum of the Society, alleged to have been collected at Table Cape, Tasmania (pp. 14–15).
- Woods, J. E. Tenison, 1877. Notes on the fossils referred to in the foregoing paper [Johnston, R. M., 1877]. *Papers and Proceedings and Report of the Royal Society of Tasmania for 1876*: 91–116.
- Notes *Micraster brevistella* Laube (p. 116), describes *Micraster etheridgei* sp. nov. and *Hemipatagus woodsii* var. A. (p. 116). [Note: the above specific names were given by Woods to descriptions made by Johnston (1877), however the new species have always been attributed to Johnston by subsequent authors].
- Woods, J. E. Tenison, 1878a. On the Tertiary deposits of Australia. *Journal and Proceedings of the Royal Society of New South Wales* (1877) 11: 65–82.
- Reviews Australian Tertiary deposits and refers to previous manuscripts containing descriptions of echinoids (pp. 68–69, 75). Notes occurrence of *Lovenia forbesii* at Portland, Victoria (p. 74) and *L. forbesii* and *Arachnoides australis* at Kadina, Moonta and Wallaroo mines on Yorke's Peninsula (p. 76).
- Woods, J. E. Tenison, 1878b. Palaeontological evidence of Australian

Tertiary formations. *Journal and Proceedings of the Royal Society of New South Wales* (1877) 11: 113–128.

Includes discussions on 'Echini' present in the Tertiary rocks of Victoria, south-eastern South Australia and north Tasmania with references to recent Australian forms reputedly found in the fossil record (p. 116). Also discusses and compares fossil forms with extant species recorded from Australian waters and overseas, in particular Malta (pp. 121, 122, 125).

Woods, J. E. Tenison, 1878c. The Echini of Australia (including those of the Chevert Expedition). *The Proceedings of the Linnean Society of New South Wales* 2(2): 145–176.

Comments (p. 148) "...I cannot find that there is much connection between our tertiary fossil fauna, and what we see in the present Australian seas..." Also comments (p. 169) that *Echinanthus testudinarius* Gray, "Is a fossil on the Murray River beds" [Remainder of paper discusses only Recent species.]

Wright, T. and Adams, A. L., 1864. On the fossil echinidae of Malta with additional notes on the Miocene Beds of the Island and the stratigraphical distribution of species therein. *Quarterly Journal of the Geological Society of London* 20: 470–491, pl. 21–22.

Notes and figures *Pygorhynchus vassalli* from Malta (p. 479, pl. 22/6ac). [Note: Duncan (1877) incorrectly states that this species occurs east of the Glenelg River. References to *P. vassalli* repeated in Etheridge (1875), Duncan (1887), Johnston (1888) and Tate (1888). These specimens have since been referred to either *Notolampas flosculus* Philip, 1963, or *Studeria elegans* (Laube, 1869) ]

Zittel, K. A. von, 1865\*. Fossile mollusken und echinodermen aus Neu-Seeland. Pp. 15–68, pls 6–15 (German) in F. von Hochstetter, M. Hornes and F. R. von Hauer (eds.), *Palaontologie von Neu-Seeland. Beiträge zur Kenntniss der Fossilen Flora und Fauna der Provinzen Ackland und Nelson. Novara-Expedition Geologischer Theil* 1(2). [\* date quoted in British Museum Library Catalogue as volume does not give a publication date]

Refers to *Spatangus forbesi* Tenison Woods, 1862, in discussion on new species of *Hemipatagus* from New Zealand (p. 64).

Chronological Index

1778 Leske, N. G.  
1825 Blainville, H. M. D. de  
1833 Sturt, C.  
1846 Valenciennes, A.  
1851 Gray, J. E.  
1852 Forbes, E.  
1859 Woods, J. E. Tenison.  
1860 Woods, J. E. Tenison.  
1862 Woods, J. E. Tenison.  
1864 Duncan, P. M.  
Wright, T. and Adams, A.L.  
1865 Wilkinson, C. S.  
Woods, J. E. Tenison.  
Zittel, K. A.  
1867 Woods, J. E. Tenison.  
1869 Laube, G. C.  
1870 Duncan, P. M.  
Stephens, T.  
1873 Hutton, F. W.  
1874 Kruse, F. M.  
McCoy, F.  
1875 Etheridge, R.  
Etheridge, R. and Murray, R. A. F.  
Howitt, A. W.  
1876 Woods, J. E. Tenison.  
1877 Duncan, P. M.  
Johnston, R. M.  
Tate, R.  
Woods, J. E. Tenison.  
1878 Duncan, P. M.  
Etheridge, R.  
Tate, R.  
Woods, J. E. Tenison (3).  
1879 Howitt, A. W.  
McCoy, F.

Tate, R. (2)  
Tepper, O.  
1882 McCoy, F.  
1883 Pomel, A.  
Tate, R.  
1885 Tate, R. (2)  
1887 Duncan, P. M.  
Johnston, R. M.  
Murray, R. A. F.  
1888 Johnston, R. M. (2)  
Tate, R.  
1889 Cotteau, G.  
Duncan, P. M.  
1890 Cotteau, G.  
Dennant, J.  
Gregory, J. W.  
Tate, R. (2)  
1891 Cotteau, G.  
Dennant, J. (2)  
Tate, R.  
1892 Bittner, A.  
Etheridge, R. (2)  
Gregory, J. W.  
Hall, T. S. and Pritchard, G. B.  
Pritchard, G. B.  
Tate, R.  
1893 Lambert, J.  
Mulder, J. F.  
Tate, R.  
Tate, R. and Dennant, J.  
1894 Hall, T. S. and Pritchard, G. B.  
Stirling, J.  
1895 Hall, T. S. and Pritchard, G. B.  
Tate, R. and Dennant, J.  
1896 Hall, T. S. and Pritchard, G. B.  
Lambert, J.  
Mulder, J. F.  
Pritchard, G. B.  
Tate, R. and Dennant, J.  
1897 Hall, T. S. and Pritchard, G. B. (2)  
Mitchell, J.  
1898 Dennant, J. and Clark, D.  
Dennant, J. and Mulder, J. F.  
Lambert, J.  
Tate, R.  
1899 Hall, T. S. and Pritchard, G. B.  
1900 Clark, E. V.  
1901 Basedow, H.  
1902 Kitson, A. E.  
1903 Dennant, J. and Clark, D.  
Dennant, J. and Kitson, A. E.  
Howchin, W.  
Kitson, A. E.  
1904 Mortensen, T.  
1907 Chapman, F.  
Hall, T. S.  
1908 Chapman, F.  
Hall, T. S.  
Pritchard, G. B.  
1909 Lambert, J. and Thiéry, P.  
1910 Brown, H. Y. L.  
Chapman, F.  
Hall, T. S.  
Lambert, J. and Thiéry, P.  
1911 Lambert, J. and Thiéry, P.  
1912 Chapman, F.  
Howchin, W.  
Jackson, R. T.  
1913 Chapman, F.  
Etheridge, R.



- 1914 Chapman, F. (2)  
Gregory, J. W.  
Lambert, J. and Thiéry, P.  
Mulder, J. F.
- 1915 Chapman, F.  
Gregory, J. W.
- 1916 Chapman, F. (2)  
Hawkins, H. L.
- 1918 Howchin, W.
- 1920 Chapman, F.  
Hawkins, H. L.  
Lambert, J.
- 1921 Chapman, F.  
Lambert, J. and Thiéry, P.
- 1923 Chapman, F.  
Glauert, L.  
Howchin, W.  
Singleton, F. A.
- 1924 Lambert, J. and Thiéry, P.  
Pritchard, G. B.  
Singleton, F. A.  
Whitehouse, F. W.
- 1925 Lambert, J. and Thiéry, P.
- 1926 Chapman, F.  
Chapman, F. and Crespin, I.  
Crespin, I.  
Glauert, L.
- 1928 Chapman, F.  
Chapman, F. and Cudmore, F. A.  
Howchin, W.  
Mortensen, T. (2)
- 1929 Brighton, A. G.
- 1930 Brighton, A. G.
- 1934 Chapman, F.  
Chapman, F. and Crespin, I.  
Chapman, F. and Cudmore, F. A.  
Davies, A. M.
- 1935 Chapman, F. and Crespin, I.  
Davies, A. M.  
Mortensen, T.
- 1936 Colliver, F. S.
- 1937 Colliver, F. S.
- 1938 Clark, H. L.  
Kenny, J. P. L.
- 1940 Mortensen, T.
- 1941 Nye, P. B.  
Singleton, F. A.
- 1943 Baker, G.  
Crespin, I. (2)  
Gill, E. D.  
Glaessner, M. F. and Parr, W. J.  
Mortensen, T. (2)
- 1944 Baker, G.  
Crespin, I.
- 1946 Clark, H. L.
- 1947 Gill, E. D.
- 1948 Clark, E. de C., Teichert, C. and McWhae, J. R. H.  
Mortensen, T. (2)
- 1949 Carrol, D.  
Fell, H. B.
- 1950 David, T. W. E.  
King, D.  
Mortensen, T.
- 1951 Mortensen, T.
- 1952 Gill, E. D.  
Sherrard, K.  
Sprigg, R. C.
- 1953 Fell, H. B.  
Glaessner, M. F.  
Reynolds, M. A.
- Termier, H. and Termier, G.
- 1955 Durham, J. W.  
Neaverson, E.  
Raggatt, H. G. and Crespin I.
- 1956 Brunnschweiler, R. O.
- 1957 Ludbrook, N. H.  
Philip, G. M.
- 1958 Glaessner, M. F. and Wade,  
Ludbrook, N. H. (2)  
McWhae et al.
- 1959 Jones, P. J.
- 1961 Brunnschweiler, R. O.  
Ludbrook, N. H.
- 1962 Kier, P. M.  
Philip, G. M.
- 1963 Bowler, J. M.  
Carter, A. N.  
Fell, H. B.  
Philip, G. M. (3)  
Wilkins, R. W. T.
- 1964 Brown, I. A.  
Fell, H. B.  
Philip, G. M.
- 1965 Crawford, A. R.  
Philip, G. M. (2)  
Roman, J.  
Talent, J. A.  
Thomas, G. A.
- 1966 Bock, P. E. and Glenie, R.  
Durham, J. W. et al.  
Philip, G. M.
- 1967 Brown, I. A.  
Kenley, P. R.
- 1968 Cockbain, A. E.  
Hill, D., Playford, G. and Woods, J. T. (eds).  
Jenkin, J. J.  
Singleton, O. P.
- 1969 Ludbrook, N. H.  
Philip, G. M.
- 1970 Fleming, P. J. G.  
Foster, R. J (2)  
Hocking, J. B.  
Philip, G. M.  
Philip, G. M. and Foster, R. J.  
Stuart, W. J. Jnr.
- 1971 Davies, A. M.  
Fletcher, H. O.  
Kenley, P. R.  
Philip, G. M.  
Philip, G. M. and Foster, R. J.
- 1972 Quilty, P. G.
- 1973 Gostin, V. A.  
Singleton, O. P.
- 1974 Foster, R. J.  
Quilty, P. G.
- 1975 Davies, A. M.  
Henderson, R. A.  
Playford, P. E. et al.  
Ripper, D. T.
- 1976 Abele, C.  
Abele, C. et al.  
Carmichael, E.  
Corbett, D.  
Foster, R. J. and Philip, G. M. (2)  
Playford, P. E., Cockbain, A. E. and Low, G. H.  
Pritchard, G. B.
- 1978 Foster, R. J. and Philip, G. M.  
Kier, P. M. and Lawson, M. H.  
Macumber, P. G.  
Philip, G. M.

1979 Abele, C.  
Cooper, B. J.  
Daily, B. et al.  
1980 Aslin, D.  
Foster, R. J. and Philip, G. M.  
McNamara, K. J. and Philip, G. M. (2)  
Rose, E. P. F. and Olver J. B. S.  
1981 Anon. (Holmes, F. C.)  
1982 Whatmough, R. J.  
1983 Bartrop, S.  
Beardsmore, T.  
Milnes, A. R. et al.  
Sadler, T., Pledge, N. S. and Morris, B.  
1984 McNamara, K. J. and Philip, G. M.  
Smith, A. B.  
1985 Carter, A. N.  
Cooper, B. J.  
Henderson, R. A. and  
McNamara, K. J.  
Kruse, P. M. and Philip, G. M.  
McNamara, K. J. (2)  
Murray, J. W.  
Pledge, N. S.  
Sadler, T. and Pledge, N. S.  
1986 Carmichael, E.  
McNamara, K. J.  
McNamara, K. J., Philip, G. M. and Kruse, P. D.  
1987 Hocking, R. M., Moors, H. T. and van de Graaff, J. E.  
Holmes, F. C. (2)  
McNamara, K. J. (4)  
1988 Abele, C. (2)  
Abele, C. et al.  
Bolger, P.  
Holmes, F. C.  
Jenkin, J. J.  
McNamara, K. J.  
Rosengren, N.  
1989 Holmes, F. C.  
McNamara, K. J. (2)  
McNamara, K. J. and Ah Yee, C.  
Mooi, R.  
1990 Archbold, N. W.  
Hocking, R. M. (3)  
McNamara, K. J.  
Pledge, N. S. and Sadler, T.  
White, M. E.  
1991 Bell, K. N.  
Brown, G. M. and Stephenson, A. E.  
Holmes, F. C. (2)  
McNamara, K. J. (2)  
McNamara, K. J. and Friend, D.  
1992 McKinney, M. L. et al.  
McNamara, K. J. (2)  
McNamara, K. J. and Brimmell, K.  
Walker, C. A. and Ward, D. J.  
Webster, G. D. and Jell, P. A.  
1993 Holmes, F. C.  
McNamara, K. J.

List of Genera and Species

Junior synonyms of currently accepted taxa (as originally published) are inset after the primary listing. Subsequent references are included only if authors have changed the generic name, or cited material has been redescribed as belonging to two or more separate species or subspecies. These latter entries are indicated by "(part)" after the author and date.

Junior synonyms are also listed alphabetically in their original combination with a reference to the currently accepted taxa.

Extant species, not recorded from the fossil record, are not listed.

The following abbreviations are used to indicate the families to which listed species belong, based on the Treatise on Invertebrate Paleontology, Part U, Echinodermata 3(1 and 2). [Note: only families represented in the Australian fossil record are included]

APA.	Apatopygidae	FOS.	Fossulasteridae
ARA.	Arachnoididae	HEM.	Hemiasteridae
ARB.	Arbaciidae	HOL.	Holasteridae
ARC.	Archaeocidaridae	LAG.	Laganidae
BRI.	Brissidae	LEP.	Lepidocentridae
CAS.	Cassidulidae	LOV.	Loveniidae
CID.	Cidaridae	NEO.	Neolampadidae
CLT.	Clypeasteridae	PAL.	Palaechinidae
CLY.	Clypeidae	PER.	Pericosmidae
COR.	Corystidae	PLI.	Pliolampadidae
DIA.	Diadematidae*	SAL.	Saleniidae
ECL.	Echinolampadidae	SCH.	Schizasteridae
ECM.	Echinometridae	SPA.	Spatangidae
ECN.	Echinoneidae	STR.	Strongylocentrotidae
FAU.	Faujasidae	TEM.	Temnopleuridae
FIB.	Fibulariidae	TOX.	Toxopneustidae*

\* Philip (1965) described and figured fragments which indicate the occurrence of generically indeterminate representatives of these families in the Australian fossil record.

*abductus*, *Schizaster* (*Schizaster*)  
*aldingensis*, *Prenaster*  
*Amblypneustes formosus* Valenciennes, 1846 (TEM)  
*Amblypneustes* sp. of Foster and Philip, 1980 (TEM)  
*Ammotrophus crassus* (H.L.Clark, 1938). — Mortensen, 1948 (ARA)  
: *Hesperaster crassus* H.L.Clark, 1938  
*Amoraster paucituberculata* McNamara and Ah Yee, 1989 (BRI)  
*Amoraster tuberculata* McNamara and Ah Yee, 1989 (BRI)  
*annulatus*, *Microcyphus*  
*anomalus*, *Eupatagus*  
*anomala*, *Maretia* [refer *Eupatagus anomalus*]  
*antiaustralis*, *Protenaster*  
*antiquus*, *Strongylocentrotus*  
*Apatopygus vincentinus* (Tate, 1891). — Philip, 1970 (APA)  
: *Echinobrissus vincentinus* Tate, 1891  
: *Nucleolites vincentinus* — H.L.Clark, 1946  
*apokryphos*, *Psephoaster*  
*Apoxyptalum chenjafr* McNamara, 1993 (BRI)  
*Archaeocidaris selwyni* Etheridge, 1892 (ARC)  
*archeri*, *Cylaster*  
*Australanthus longianus* (Gregory, 1890). Bittner, 1892 (FAU)  
: *Cassidulus longianus* Gregory, 1890  
*australiae*, *Brochopleurus* [refer *Ortholophus* and *Paradoxechinus* species]  
*australiae*, *Cibaster* (*Duncaniaster*) [refer *Corystus dysasteroides*]  
*australiae*, *Duncaniaster* [refer *Corystus dysasteroides*]  
*australiae*, *Eurhodia*  
*australiae*, *Galeraster* [refer *Corystus dysasteroides*]  
*australiae*, *Granobrissoides*  
*australiae*, *Holaster* [refer *Corystus dysasteroides*]  
*australiae*, *Stereocidaris* [refer also *Austrocidaris*, *Stylocidaris* and *Phyllacanthus* species]  
*australis*, *Brissopsis*  
*australis*, *Echinocorys*  
*australis*, *Monostychia*  
*australis* var. *elongata*, *Monosatychia*  
*australis*, *Protenaster*  
*Austrocidaris operata* Philip, 1964 (CID)  
: *Stereocidaris australiae* (Duncan). — Chapman and Cudmore, 1934 (part.)  
: *Goniocidaris prunispinosa* Chapman and Cudmore. — Chapman and Cudmore, 1934 (part.)



- bellissae*, *Giraliaster*  
*bitneri*, *Ortholophus*  
*brevis*, *Peraspatangus*  
*brevistella*, *Cyclaster* [refer *Cyclaster archeri*]  
*brevistella*, *Micraster* [refer *Cyclaster archeri*]  
*Breynia* aff. *carinata* d'Archiac and Haime, 1853.—  
 McNamara, 1988 (LOV)  
*Brissopsis australis* McNamara, Philip and Kruse, 1986 (BRI)  
*Brissopsis praeluzonica* Fell, 1964 (BRI)  
*Brissopsis tatei* Hall, 1907 (BRI)  
*Brissus fosteri* McNamara, Philip and Kruse, 1986 (BRI)  
*bullarensis*, *Cardabia*  
*callidus*, *Hemiaster* (*Bolbaster*)  
*Cardabia bullarensis* Foster and Philip, 1978 (COR)  
*carinatus*, *Schizaster* (*Paraster*)  
*Cassidulus florescens* Gregory, 1892 (CAS)  
 : *Procassidulus florescens* .— Lambert and Thiéry, 1921  
*Cavanechinus warreni* Brown, 1967 (LEP)  
*celsus*, *Pericosmus*  
*cetus*, *Eupatagus*  
*chapmani*, *Stylocidaris* (?)  
*chenjafra*, *Apoxypetalum*  
*clarkii*, *Chondrocidaris* [refer *Menocidaris* and *Stereocidaris* species]  
*clarkii clarkii*, *Phyllacanthus*  
*clarkii impensus*, *Phyllacanthus*  
*Clypeaster gippslandicus* McCoy, 1879 (CLT)  
 : *Echinanthus testudinarius* Duncan (non Gray), 1877  
*Clypeus* cf. *melchlini* (Wright, 1854).— Rose and Olver, 1980 (CLY)  
*collabus*, *Eupatagus*  
*compressus*, *Pericosmus* [refer also other *Pericosmus* species and *Meoma tuberculator*]  
*compta*, *Lenicyamida*  
*compta*, *Menocidaris*  
*comptoni*, *Goniocidaris*  
*concinna*, *Pisolampas*  
*concinus*, *Echinobrissus* [refer *Pisolampas concinna*]  
*coranguinum*, *Eupatagus* [refer *Gillechinus cudmorei*]  
*Corystus dysasteroides* (Duncan, 1877).— Pomel, 1883 (COR)  
 : *Rhynchopygus dysasteroides* Duncan, 1877  
 : *Holaster australiae* Duncan, 1877  
 : *Holaster difficilis* Duncan, 1887  
 : *Galeraster Australiae* Cotteau, 1890  
 : *Lampadocorys Australiae* .— Lambert, 1893  
 : *Duncaniaster Australiae* .— Lambert, 1896  
 : *Cibaster* (*Duncaniaster*) *Australiae* .— Lambert and Thiéry, 1924  
*crawfordi*, *Pericosmus* (part.) [refer *Pericosmus compressus*]  
*Cryptechinus humilior* (Bittner, 1892).— Philip, 1969 (TEM)  
 : *Psammechinus* (?) *humilior* Bittner, 1892  
 : *Psammechinus Woodsi* .— Tate, 1892 (part.)  
 : *Echinopsis humilior* .— Lambert and Thiéry, 1910  
 : *Pseudechinus woodsi* .— H.L.Clark, 1946 (part.)  
 : (non) *Psammechinus Woodsi* Laube, 1869  
*cudmorei*, *Gillechinus*  
*cudmorei*, *Stereocidaris*  
*Cyamida paucipora* Brunschweiler, 1961 (FIB)  
*Cyclaster archeri* (Tenison Woods, 1867).— Lambert and Thiéry, 1924 (BRI)  
 : *Hemiaster Archeri* Tenison Woods, 1867  
 : *Micraster brevistella* Laube, 1869  
 : *Hemiaster posita* Hutton, 1873  
 : *Brissopsis* (sic) *Archeri* .— Tate, 1885  
 : *Cyclaster Morgani* Cotteau, 1889  
 : *Cyclaster lycoperdon* Bittner, 1892  
 : *Micraster Archeri* .— Tate, 1892  
 : *Cyclaster posita* .— Tate, 1894  
*decipiens*, *Eupatagus* [refer *Meoma tuberculata*]  
*decipiens*, *Macropneustes* [refer *Meoma tuberculata*]  
*decipiens*, *Meoma* [refer *Meoma tuberculata*]  
*decipiens*, *Schizobrissus* [refer *Meoma tuberculata*]  
*Deliocidaris prunispinosa* (Chapman and Cudmore, 1928).— Philip, 1964 (CID)  
 : *Goniocidaris prunispinosa* Chapman and Cudmore in Chapman, 1928 (part.)  
*dennanti*, *Echinoneus*  
*depressus*, *Peraspatangus*  
*difficilis*, *Holaster* [refer *Corystus dysasteroides*]  
*dolosus*, *Hemiaster* (*Bolbaster*)  
*duncani duncani*, *Phyllacanthus*  
*duncani*, *Echinolampas* [refer *Echinolampas laubei*]  
*duncani gambierensis*, *Phyllacanthus*  
*dysasteroides*, *Corystus*  
*Echinocorys australis* Foster and Philip, 1978 (HOL)  
 : *Echinocorys sulcatus* Goldfuss. — Brunschweiler, 1956  
*Echinocorys stomias* McNamara, 1987 (HOL)  
*Echinocyamus planissimus* H.L.Clark, 1938 (FIB)  
*Echinolampas gambierensis* Tenison Woods, 1867 (ECL)  
*Echinolampas gregoryi corrugata* McNamara and Philip, 1980 (ECL)  
*Echinolampas gregoryi gregoryi* McNamara and Philip, 1980 (ECL)  
*Echinolampas laubei* nom. nov. McNamara, 1987 (ECL)  
 : *Echinolampas duncani* McNamara (non Cotteau), 1987  
 : *Echinolampas ovulum* .— Duncan, 1887 .— Gregory, 1890  
*Echinolampas morgani* Cotteau, 1890 (ECL)  
*Echinolampas ovulum* Laube, 1869 (ECL)  
*Echinolampas posterocrassa curtata* McNamara and Philip, 1980 (ECL)  
*Echinolampas posterocrassa posterocrassa* Gregory, 1890 (ECL)  
 : *Echinolampas posterocrassus* Gregory, 1890  
 : *Progonolampas novae-hollandiae* Bittner, 1892  
*Echinolampas tatei* Lambert, 1898 (ECL)  
 : *Conoclypeus rostratus* Tate, 1893  
 : *Plesiolampas rostratus* .— Tate, 1898  
*Echinolampas* aff. *tatei* .— McNamara and Philip, 1980 (ECL)  
*Echinolampas westraliensis* (Crespin, 1943).— McNamara and Philip, 1980b (ECL)  
 : *Conoclypeus westraliensis* Crespin, 1943  
 : *Hypsoclypeus westraliensis* .— Brunschweiler, 1961  
*Echinometra mathaei* (Blainville, 1825).— Blainville, 1830 (ECM)  
 : *Echinus mathaei* Blainville, 1825  
*Echinoneus dennanti* Hall, 1907 (ECH)  
*elegans*, *Studeria*  
*etheridgei*, *Monostychia*  
*Eucidaris strombilata felli* Philip, 1963 (CID)  
*Eupatagus anomalus* (Duncan, 1877).— Kruse and Philip, 1985 (BRI)  
 : *Maretia anomala* Duncan, 1877  
*Eupatagus cetus* Kruse and Philip, 1985 (BRI)  
*Eupatagus collabus* Kruse and Philip, 1985 (BRI)  
 : *Eupatagus* sp. nov. cf. *australiae* (Cotteau, 1889) Philip, 1970  
*Eupatagus ludbrookae* Kruse and Philip, 1985 (BRI)  
*Eupatagus murrayensis* Laube, 1869 (BRI)  
 : *Euspatagus Murrayensis* .— Bittner, 1892  
 : *Brissoides murrayensis* .— Lambert and Thiéry, 1924  
*Eupatagus* cf. *murrayensis* Laube. — Kruse and Philip, 1985 (BRI)  
*Eupatagus planulatus* Kruse and Philip, 1985 (BRI)

- Eupatagus rotundus* Duncan, 1877 (BRI)  
: *Euspatangus rotundus* .— Bittner, 1892  
: *Brissoides rotundus* .— Lambert and Thiéry, 1924
- Eupatagus wrighti* Laube, 1869 (BRI)  
: *Brissoides Wrighti* .— Lambert and Thiéry, 1924
- Eurhodia australiae* (Duncan, 1877).— Philip, 1970 (PLI)  
: *Echinobrissus australiae* Duncan, 1877  
: *Cassidulus australiae* .— Tate, 1898  
: *Nucleolites australiae* .— H.L.Clark, 1946
- Evechinus palatus* Philip, 1969 (ECM)  
*exiguus*, *Fossulaster*
- Fellaster incisa* (Tate, 1893).— Foster and Philip, 1970 (ARA)  
: *Arachnoides incisa* Tate, 1893  
: *Echinarachnius incisa* .— Lambert and Thiéry, 1925
- Fibularia gregata* Tate, 1885 (FIB)  
: *Fibularia Tatei* Bittner, 1892  
: *Echinocyamus gregatus* .— Lambert and Thiéry, 1914
- florescens*, *Cassidulus*  
*flosculus*, *Notolampas*  
*folium*, *Clypeaster* [refer *Monostychia australis*]  
*forbesii*, *Lovenia*  
*formosus*, *Amblypneustes*
- Fossulaster exiguus* Philip and Foster, 1971 (FOS)  
*Fossulaster halli* Lambert and Thiéry, 1925 (FOS)  
*fosteri*, *Brissus*  
*fosteri*, *Schizaster* (*Schizaster*)  
*fosteri*, *Stereocidaris*
- gambierensis*, *Echinolampas*  
*gigas*, *Victoriaster*
- Gillechinus cudmorei* Fell, 1964 (BRI)  
: *Eupatagus cor-anguinum* Tate (ms.).— Pritchard, 1892  
: *Brissopatagus cudmorei* .— Philip, 1966
- gippslandicus*, *Clypeaster*  
*Giraliaster bellissae* Foster and Philip, 1978 (HOL)  
*Giraliaster jubileensis* Foster and Philip, 1978 (HOL)  
*Giraliaster sulcatus* (Hutton, 1873).— Foster and Philip, 1978 (HOL)  
: *Amphidotus sulcatus* Hutton, 1873 (New Zealand only)  
: *Cardiaster latecordatus* Tate, 1891
- Giraliaster tertarius* (Gregory, 1890).— Foster and Philip, 1978 (HOL)  
: *Cardiaster tertarius* Gregory, 1890  
: *Holaster tertarius* .— Lambert and Thiéry, 1924
- globosa*, *Salenia* [refer *Salenidia tertiaria*]  
*Goniocidaris comptoni* (Glauert, 1923).— McNamara, 1986 (CID)  
: *Cidaris comptoni* Glauert, 1923
- Goniocidaris murrayensis* Chapman and Cudmore, 1934 (CID)  
: *Goniocidaris pentaspinosa* Chapman and Cudmore, 1928 (part.) and Chapman and Cudmore, 1934 (part.)  
: *Goniocidaris prunispinosa* Chapman and Cudmore, 1934 (part.)
- Goniocidaris (?) pentaspinosa* Chapman and Cudmore, 1928 (part.) (CID)  
*Goniocidaris praecipua* Philip, 1964 (CID)  
*Goniocidaris tubaria hallettensis* nom. nov. Philip, 1964 (CID)  
: *Goniocidaris mortenseni* Chapman and Cudmore, 1934
- Goniosigma murrayensis* (Philip, 1969).— Philip, 1971 (TEM)  
: *Asaphechinus murrayensis* Philip, 1969
- Goniosigma princeps* (Philip, 1969).— Philip, 1971 (TEM)  
: *Asaphechinus princeps* Philip, 1969
- Goniosigma singletoni* (Philip, 1969).— Philip, 1971 (TEM)  
: *Asaphechinus singletoni* Philip, 1969
- Goniosigma tasmanensis* (Philip, 1969).— Philip, 1971 (TEM)  
: *Asaphechinus tasmanensis* Philip, 1969
- Grammechinus meridionalis* Philip, 1969 (TEM)  
*Granobrissoides australiae* (Cotteau, 1889).— Lambert, 1920 (BRI)  
: *Gualtieria Australiae* Cotteau, 1889
- granulosis*, *Paradoxechinus*  
*gregata*, *Fibularia*  
*gregatus*, *Echinocyamus* [refer *Fibularia gregata*]  
*gregoryi corrugata*, *Echinolampas*  
*gregoryi gregoryi*, *Echinolampas*
- halli*, *Fossulaster*  
*halli*, *Schizaster* (*Schizaster*)  
*Heliocidaris ludbrookae* Philip, 1964 (ECM)  
*Hemiaster (Bolbaster) callidus* McNamara, 1987 (HEM)  
*Hemiaster (Bolbaster) dolosus* McNamara, 1987 (HEM)  
*Hemiaster (Bolbaster) planedeclevis* Gregory, 1890 (HEM)  
*Hemiaster (Bolbaster) subidus* McNamara, 1987 (HEM)  
*Hemiaster (Bolbaster) verecundus* McNamara, 1987 (HEM)  
*Hemiaster sweeti* (Etheridge, 1892).— Hill, Playford and Woods, 1968 (HEM)  
: *Micraster Sweeti* Etheridge, 1892
- hentyi*, *Irenechinus* [refer *Ortholophus pulchellus*]  
*hispidus*, *Stereocidaris* (?)  
*hoffmanni*, *Spatangus* [refer *Lovenia forbesii*]  
*humilior*, *Cryptechinus*
- incisa*, *Fellaster*  
*incisa*, *Echinarachnius* [refer *Fellaster incisa*]  
*inermis*, *Stereocidaris*  
*intricata*, *Stereocidaris*  
*irregularis*, *Phyllacanthus*
- jubileensis*, *Giraliaster*
- klydonos*, *Psephoaster*
- latecordatus*, *Cardiaster* [refer *Giraliaster sulcatus*]  
*laubei*, *Echinolampas*  
*laubei*, *Spatagobrissus*  
*Lenicyamida compta* Brunnenschweijer, 1961 (FIB)  
*Lepedocentroid* indet. Talent, 1965  
*lesueri augusta*, *Peronella*  
*lineatus*, *Ortholophus* [refer also *Ortholophus bittneri*]  
*Linthia pulchra* McNamara, 1985 (SCH)  
*lissos*, *Psephoaster*  
*longianus*, *Australanthus*  
*loveni*, *Monostychia*  
*Lovenia forbesii* (Tenison Woods, 1862).— Duncan, 1877 (LOV)  
: *Spatangus hoffmanni* Sturt (non Goldfuss), 1833  
: *Spatangus forbesii* Tenison Woods, 1862  
: *Hemipatagus forbesi* .— Duncan, 1864  
: *Sarsella forbesii* .— Bittner, 1892
- Lovenia woodsii* (Etheridge, 1875).— Duncan, 1877 (LOV)  
: *Hemipatagus woodsii* Etheridge, 1875
- ludbrookae*, *Eupatagus*  
*ludbrookae*, *Heliocidaris*  
*lycoperdon*, *Cyclaster* [refer *Cyclaster archeri*]
- maccoyi*, *Pericosmus*  
*mathaei*, *Echinometra*  
*Menocidaris compta* Philip, 1964 (CID)  
: *Chondrocidaris clarkii* Chapman and Cudmore, 1934 (radioles part.)
- Meoma tuberculata* Hutton, 1873 (BRI)  
: *Pericosmus tuberculatus* .— Hutton, 1888  
: *Pericosmus compressus* (Duncan).— Gregory, 1890  
: *Eupatagus decipiens* Tate, 1891



- : *Macropneustes decipiens* .— Gregory, 1892 (TEM)  
 : *Eupatagus* (?) *tuberculatus* .— Tate, 1894  
 : *Meoma decipiens* .— Tate and Dennant, 1896  
 : *Schizobrisssus decipiens* .— Foster, 1970
- merionalis, Grammechinus**  
*Microcyphus annulatus* Mortensen, 1904 (TEM)  
**mirabilis, Pentechinus**  
*Monostychia australis* Laube, 1869 (ARA)  
 : *Scutella* sp. Sturt, 1833  
 : *Clypeaster folium* Duncan (non Agassiz), 1864  
 : *Arachnoides australis* .— Duncan, 1877  
 : *Clypeaster* (*Monostychia*) *australis* .— Duncan, 1887  
*Monostychia australis* var. *elongatus* (Duncan, 1877).— Pomel, 1883 (ARA)  
 : *Arachnoides elongatus* Duncan, 1877  
 : *Clypeaster* (*Monostychia*) *australis* var. *elongata* .— Duncan, 1887  
*Monostychia etheridgei* (Johnston, 1877).— Johnston, 1888a (ARA)  
 : *Micraster etheridgei* Johnston\*, 1877 [\* see 'Note' in bibliography - Woods, 1877]  
*Monostychia loveni* (Duncan, 1877).— McCoy, 1879 (ARA)  
 : *Arachnoides Loveni* Duncan, 1877  
 : *Clypeaster* (*Monostychia*) *loveni* .— Duncan, 1887  
*mooraboolensis*, *Linthia* [refer *Victoriaster gigas*]  
**morganensis, Ortholophus**  
*morgani*, *Cyclaster* [refer *Cyclaster archeri*]  
**morgani, Echinolampas**  
**morgani, Scutellinoides**  
*mortenseni*, *Goniocidaris* [refer *Goniocidaris tubaria hallettensis*]  
*Murravechinus paucituberculatus* (Gregory, 1890).— Philip, 1965b (ARB)  
 : *Coelopleurus paucituberculatus* Gregory, 1890  
 : *Murravechinus spinosus* Tate (ms.), 1891  
**murravica, Sismondia**  
**murrayensis, Eupatagus**  
**murrayensis, Goniocidaris**  
**murrayensis, Goniosigma**
- nelsoni, Waurnia**  
*Notolampas flosculus* Philip, 1963 (NEO)  
 : *Pygorhynchus Vassali* Wright .— Tate, 1891  
 : (non) *Pygorhynchus Vassali* Duncan (non Wright), 1877  
*novaehollandiae*, *Progonolampas* [refer *Echinolampas posterocrassa posterocrassa*]  
*novus*, *Paradoxechinus* [refer also *Ortholophus* species]  
**nodus, Tatechinus**
- Oligoporus** (?) sp. Thomas, 1966 (PAL)  
**operata, Austrocidaris**  
**orbicularis, Peronella**  
*Ortholophus bittneri* Philip, 1969 (TEM)  
 : *Coptechinus lineatus* Bittner, 1892  
 : *Paradoxechinus novus* .— Tate, 1892 (part.)  
 : *Paradoxechinus lineatus* (Bittner).— Lambert and Thiéry, 1910  
 : *Paradoxechinus lineatus* (Duncan).— Mortensen, 1942 (part.)  
 : *Paradoxechinus novus* .— Fell and Pawson, 1966  
 : (non) *Temnechinus lineatus* Duncan, 1877  
*Ortholophus lineatus* (Duncan, 1877).— Duncan, 1887 (TEM)  
 : *Temnechinus lineatus* Duncan, 1877  
 : *Paradoxechinus novus* .— Tate, 1892 (part.)  
 : *Prionechinus lineatus* .— Lambert and Thiéry, 1910  
 : (non) *Paradoxechinus novus* Laube, 1869  
*Ortholophus morganensis* Philip, 1969 (TEM)  
 : *Paradoxechinus novus* Laube.— Tate, 1892  
 : (non) *Paradoxechinus novus* Laube, 1869  
*Ortholophus pulchellus* (Bittner, 1892).— Philip, 1966
- : *Coptechinus pulchellus* Bittner, 1892  
 : *Psammechinus Woodsi* Laube.— Tate (part.), 1892  
 : *Arbacina pulchella* .— Lambert and Thiéry, 1911  
 : *Paradoxechinus pulchellus* .— Mortensen, 1943 (part.)  
 : *Progonechinus pulchellus* .— Mortensen, 1943  
 : *Pseudechinus woodsii* .— H.L.Clark, 1946 (part.)  
 : *Irenechinus hentyi* Fell, 1954  
*Ortholophus venustus* Philip, 1969 (TEM)  
*Ortholophus woodsii* (Laube, 1869).— Philip, 1966 (TEM)  
 : ? *Echinus* sp. Sturt, 1833  
 : *Psammechinus Woodsi* Laube, 1869  
 : *Arbacina Woodsi* .— Pomel, 1883  
 : *Psammechinus Woodsi* var. *fascigar* Bittner, 1892  
 : *Prionechinus Woodsi* .— Lambert and Thiéry, 1911  
 : *Pseudechinus woodsii* .— H. L. Clark, 1946 (part.)  
 : *Brochopleurus australiae* Fell, 1949 (part.)  
**ovulum, Echinolampas**
- Palaechinus* sp. Mitchell, 1898 (PAL)  
**palatus, Evechinus**  
*Paradoxechinus granulatus* Philip and Foster, 1971 (TEM)  
*Paradoxechinus novus* Laube, 1869 (TEM)  
 : *Brochopleurus australiae* Fell, 1949 (part.)  
*Paradoxechinus profundus* Philip and Foster, 1971 (TEM)  
*Paradoxechinus stellatus* Philip and Foster, 1971 (TEM)  
**patella, Scutellinoides**  
**paucipora, Cyamidia**  
**paucituberculata, Amoraster**  
**paucituberculatus, Murravechinus**  
*pentaspinosus, Goniocidaris* (?) [refer also *Goniocidaris murrayensis*]  
*Pentechinus mirabilis* Philip and Foster, 1971 (TEM)  
*Peraspatangus brevis* Philip and Foster, 1971 (SPA)  
*Peraspatangus depressus* Philip and Foster, 1971 (SPA)  
**peregrinus, Zenocentrotus**  
*Pericosmus celsus* McNamara and Philip, 1984 (PER)  
*Pericosmus compressus* (Duncan, 1877).— Gregory, 1890 (PER)  
 : *Megalaster compressus* Duncan, 1877  
 : *Linthia compressus* .— H.L.Clark, 1946  
 : *Pericosmus crawfordi* (Hutton).— Henderson, 1975 (part.)  
 : (non) *Pericosmus compressus* McCoy, 1882  
*Pericosmus maccoyi* Gregory, 1890 (PER)  
 : *Pericosmus compressus* McCoy, 1882  
*Pericosmus quasimodo* McNamara and Philip, 1984 (TEM)  
*Pericosmus torus* McNamara and Philip, 1984 (PER)
- Pericosmus* sp. 'A' and sp. 'B' McNamara and Philip, 1984 (PER)  
*Peronella lesueri augusta* Pledge and Sadler, 1990 (PER)  
*Peronella orbicularis* (Leske, 1778).— A. Agassiz, 1872–4 (LAG)  
 : *Echinodiscus orbicularis* Leske, 1778  
*Peronella platymodes* (Tate, 1893) (LAG)  
 : *Laganum platymodes* Tate, 1893  
*Peronella ricta* (Gregory, 1892).— H. L. Clark, 1946 (LAG)  
 : *Laganum decagonale* var. *rictum* Gregory, 1892  
**philipi, Protenaster**  
*Phyllacanthus clarkii clarkii* (Chapman and Cudmore, 1934).— Philip, 1963 (CID)  
 : *Chondrocidaris clarkii* Chapman and Cudmore, 1934 (part.)  
 : *Phyllacanthus duncani* Chapman and Cudmore 1934, (part.)  
*Phyllacanthus clarki impensus* Philip, 1963 (CID)  
 : *Phyllacanthus duncani* Chapman and Cudmore, 1934 (part.)  
*Phyllacanthus duncani duncani* Chapman and Cudmore, 1934 (CID)

- : *Leiocidaris* sp. Duncan, 1887  
 : *Phyllacanthus duncani* Chapman and Cudmore 1934, (part.)  
 : *Stereocidaris australiae* .— Chapman and Cudmore, 1934 (part.)  
 : (non) *Leiocidaris australiae* Duncan, 1877  
*Phyllacanthus duncani gambierensis* Philip, 1963 (CID)  
 : *Phyllacanthus duncani* Chapman and Cudmore, 1934 (part.)  
 : *Prionocidaris scoparia* Chapman and Cudmore, 1934 (part.)  
 : *Stereocidaris australiae* .— Chapman and Cudmore, 1934 (part.)  
 : (non) *Leiocidaris australiae* Duncan, 1877  
*Phyllacanthus irregularis* Mortensen, 1928 (CID)  
*Phyllacanthus serratus* Philip, 1963 (CID)  
 : *Phyllacanthus duncani* Chapman and Cudmore, 1934 (part.)  
*Pisolampas concinna* Philip, 1963 (NEO)  
 : *Echinobrissus concinnus* Tate (ms.)  
*planedeclevis*, *Hemiaster* (*Bolbaster*)  
*planissimus*, *Echinocyamus*  
*planulatus*, *Eupatagus*  
*platymodes*, *Peronella*  
*posita*, *Cyclaster* [refer *Cyclaster archeri*]  
*posita*, *Hemiaster* [refer *Cyclaster archeri*]  
*posterocrassa curtata*, *Echinolampas*  
*posterocrassa posterocrassa*, *Echinolampas*  
*praecipua*, *Goniocidaris*  
*praeluzonica*, *Brissopsis*  
*preaustralis*, *Protenaster*  
*Prenaster aldingensis* Hall, 1907 (SCH)  
*princeps*, *Goniosigma*  
*profundus*, *Paradoxechinus*  
*Protenaster antiaustralis* (Tate, 1885).— McNamara, 1985a (SCH)  
 : *Linthia antiaustralis* Tate, 1885  
*Protenaster australis* (Grey, 1851).— Pomel, 1883 (SCH)  
 : *Desoria Australis* Gray, 1851  
 : *Linthia Australis* .— Agassiz, 1872  
*Protenaster philipi* McNamara, 1985 (SCH)  
*Protenaster preaustralis* McNamara, 1985 (SCH)  
*prunispinosa*, *Deliocidaris*  
*prunispinosa*, *Goniocidaris* [refer *Austrocidaris*, *Delocidaris* and *Goniocidaris* species]  
*Psephoaster apokryphos* McNamara, 1987 (HEM)  
*Psephoaster klydonos* McNamara, 1987 (HEM)  
*Psephoaster lissos* McNamara, 1987 (HEM)  
*Pseudechinus* sp. cf. *p. albocinctus* (Hutton).— Philip, 1969 (TEM)  
*pulchellus*, *Ortholophus*  
*pulchra*, *Linthia*  
*quasimodo*, *Pericosmus*  
*recta*, *Peronella*  
*rostratus*, *Conoclypeus* [refer *Echinolampas tatei*]  
*rostratus*, *Plesiolampas* [refer *Echinolampas tatei*]  
*rotundas*, *Eupatagus*  
*Salenida tertiaria* (Tate, 1877).— H. L. Clark, 1946 (SAL)  
 : *Salenida tertiaria* Tate, 1877  
 : *Pleurosalenida tertiaria* .— Pomel, 1883  
 : *Salenida globosa* Tate, 1891  
*Schizaster* (*Dipneustes*) *fosteri* McNamara and Philip, 1980 (SCH)  
*Schizaster* (*Paraster*) *carinatus* McNamara and Philip, 1980 (SCH)  
*Schizaster* (*Paraster*) *tatei* McNamara and Philip, 1980 (SCH)  
*Schizaster* (*Schizaster*) *abductus* Tate, 1891 (SCH)  
*Schizaster* (*Schizaster*) *halli* McNamara and Philip, 1980 (SCH)  
*Schizaster* (*Schizaster*) aff. *halli* McNamara and Philip, 1980 (SCH)  
*Schizaster* (*Schizaster*) *sphenoides* Hall, 1907 (SCH)  
*scoparia*, *Prionocidaris* [refer *Stylocidaris* and *Phyllacanthus* species]  
*scoparia*, *Stylocidaris* (?)  
*scutellaris*, Willungaster  
*Scutellinoides morgani* (Cotteau, 1891).— Durham, 1955 (FOS)  
 : *Scutellina Morgani* Cotteau, 1891  
 : *Fibularia* (*Eoscutum*) *Morgani* .— Lambert and Thiéry, 1914  
*Scutellinoides patella* (Tate, 1891).— Durham, 1955 (FOS)  
 : *Scutellina patella* Tate, 1891  
 : *Echinocyamus* (*Scutellina*) *patella* .— Chapman, 1913  
 : *Fibularia* (*Scutellina*) *patella* .— Lambert and Thiéry, 1914  
*selwyni*, *Archaeocidaris*  
*serratus*, *Phyllacanthus*  
*singletoni*, *Goniosigma*  
*Sismondia murravica* Tate, 1893 (LAG)  
*Spatagobrissus laubei* (Duncan, 1877).— McNamara, Philip and Kruse, 1986 (BRI)  
 : *Eupatagus Laubei* Duncan, 1877  
 : *Brissoides Laubei* .— Lambert and Thiéry, 1924  
*sphenoides*, *Schizaster*  
*spinousus*, *Murravechinus* [refer *Murravechinus paucituberculatus*]  
*stellatus*, *Paradoxechinus*  
*Stereocidaris australiae* (Duncan, 1877).— Chapman and Cudmore, 1934 (CID)  
 : *Leiocidaris australiae* Duncan, 1877  
 : *Cidaris* (*Stereocidaris*) *australiae* .— Tate, 1898 (part.)  
 : *Cidaris* (*Leiocidaris*) *australiae* .— Chapman, 1914 [refer also *Stylocidaris* and *Phyllocanthus* species]  
*Stereocidaris cudmorei* Philip, 1964 (CID)  
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)  
*Stereocidaris fosteri* Philip, 1964 (CID)  
*Stereocidaris inermis* Philip, 1964 (CID)  
 : *Goniocidaris inermis* Tate (ms.), 1893  
*Stereocidaris* (?) *hispida* Philip, 1964 (CID)  
*Stereocidaris* (?) *intricata* Philip, 1964 (CID)  
*Stereocidaris* sp. 'A' of Philip, 1964 (CID)  
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)  
*Stereocidaris* sp. 'B' of Philip, 1964 (CID)  
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)  
 : *Chondrocidaris clarkii* Chapman and Cudmore, 1934 (part.)  
*Stereocidaris* sp. 'C' of Philip, 1964 (CID)  
*stornias*, *Echinocorys*  
*strombilata felli*, *Eucidaris*  
*Strongylocentrotus antiquus* Philip, 1965 (STR)  
 : *Toxopneustes* sp. Tate (ms.)  
*Strongylocentrotus* (?) sp. Philip, 1965 (STR)  
*Studeria elegans* (Laube, 1869).— Duncan, 1889 (PLI)  
 : *Catopygus elegans* Laube, 1869  
 : *Pygorynchus Vassali* Duncan (non Wright), 1877  
 : *Tristmanthus elegans* .— Bittner, 1892  
*Stylocidaris* (?) *chapmani* Philip, 1963 (CID)  
 : *Stereocidaris australiae* (Duncan).— Chapman and Cudmore, 1934 (part.)  
 : (non) *Leiocidaris australiae* Duncan, 1877  
*Stylocidaris* (?) *scoparia* (Chapman and Cudmore, 1934).— Philip, 1963 (CID)  
 : *Prionocidaris scoparia* Chapman and Cudmore, 1934 (part.)  
*Stylocidaris* (?) sp. cf. *S. (?) scoparia* (Chapman and Cudmore, 1934).— Philip, 1963 (CID)  
 : *Stereocidaris australiae* (Duncan).— Chapman and



- Cudmore, 1934 (part.)  
 : *Prinocidaris scoparia* Chapman and Cudmore, 1934 (part.)  
 : (non) *Leiocidaris australiae* Duncan, 1877  
*subidus*, *Hemiaster* (*Bolbaster*)  
*sulcatus*, *Echinocorys* [refer *Echinocorys australis*]  
*sulcatus*, *Giraliaster*  
*sweeti*, *Hemiaster*
- tatechinus*, *Goniosigma*  
*Tatechinus nudus* Philip, 1969 (TEM)  
 : *Psammechinus Woodsi* Laube. – Tate, 1892 (part.)  
 : (non) *Psammechinus Woodsi* Laube, 1869  
*tatei*, *Brissopsis*  
*tatei*, *Echinolampas* [refer also *Echinolampas* aff. *tatei*]  
*tatei*, *Fibularia* [refer *Fibularia gregata*]  
*tatei*, *Schizaster* (*Paraster*)  
*tertiaria*, *Salenidia*  
*tertiarius*, *Giraliaster*  
*testudinarius*, *Echinanthus* [refer *Cyclaster gippslandicus*]  
*torus*, *Pericosmus*  
*tubaria*, *Goniocidaris*  
*tubaria hallettensis*, *Goniocidaris*  
*tuberculata*, *Amoraster*  
*tuberculata*, *Meoma*  
*tuberculatus*, *Eupatagus* (?) [refer *Meoma tuberculata*]  
*tuberculatus*, *Pericosmus* [refer *Meoma tuberculata*]
- vassali*, *Pygorhynchus* [refer *Notolampas flosculus* and *Studeria elegans*]  
*venustus*, *Ortholophus*  
*verecundus*, *Hemiaster* (*Bolbaster*)  
*Victoriaster gigas* (McCoy, 1882).— Lambert, 1920 (SCH)  
 : *Pericosmus gigas* McCoy, 1882  
 : *Linthia gigas* .— Pritchard, 1908  
 : *Linthia mooraboolensis* Pritchard, 1908  
*vincentinus*, *Apatopygus*
- warreni*, *Cavanechinus*  
*Waurnia nelsoni* (McCoy, 1882).— McNamara and Philip, 1984 (SCH)  
 : *Pericosmus nelsoni* McCoy, 1882  
 : *Linthia nelsoni* .— Pritchard, 1908  
 : *Prenaster Nelsoni* .— Lambert and Thiéry, 1925  
*westraliensis*, *Echinolampas*  
*Willungaster scutellaris* Philip and Foster, 1971 (FOS)  
*woodsii*, *Lovenia*  
*woodsii*, *Ortholophus*  
*woodsii*, *Psammechinus* [refer *Cryptechinus* and *Ortholophus* species]  
*woodsii*, *Pseudechinus* [refer *Cryptechinus* and *Ortholophus* species]  
*wrighti*, *Eupatagus*  
*Zenocentrotus peregrinus* Philip, 1964 (ECM)

#### Manuscript names

The following manuscript names do not appear to have been referred to any described species : *Echinolampas Corioensis* McCoy, 1874

- Eupatagus Forbesii* McCoy, 1874  
*Laganum crassatinum* Tate (ms.).— Pritchard, 1892  
*Monostychia deltoidalis* Tate (ms.).— Pritchard, 1892  
*Monostychia Laubei* Pomel, 1883  
*Monostychia patellus* Tate (ms.) .— Pritchard, 1892  
*Monostychia Woodsianna* Mulder, 1893  
*Scutella marsupiata* Chapman, 1916b  
*Scutella Tamboensis* McCoy, 1874

In addition Etheridge (1878) introduced the name '*Echinolampas Australis*', attributed to Tenison Woods, 1865.

This is considered by Philip (1963) to be a *lapsus calami* for *Echinolampas gambierensis*.

#### Undescribed New Species

Philip, in Lowry (1970), schedules 35 species of echinoids from various localities in the Wilson Bluff, Toolinna and Abrakurrie Limestones, Eucla Basin, Western Australia, including the following new (unnamed) species:

- Aldingan  
*Linthia* sp. nov.  
*Ortholophus* sp. nov.

- Janjukian/Longfordian  
*Scutellinoides* sp. nov.  
*Monostychia* sp. nov. 'A' cf. *deltoides* Tate (ms.)  
*Monostychia* sp. nov. 'B'  
*Eupatagus* sp. nov. cf. *australiae* (Cotteau) [figured]  
*Eupatagus* sp. nov. cf. *wrighti* (Laube)  
*Echinolampas* sp. nov.  
*Paradoxechinus* sp. nov. cf. *novus* Laube [figured]  
*Stylocidaris* (?) sp. nov. cf. *scoparia* (Chapman and Cudmore)  
*Pisolampas* sp. nov.  
*Monostychia* sp. nov. 'C'

In addition *Monostychia* cf. *australis* Laube and *Monostychia* sp. nov. are recorded from the Colville Sandstone and Nullarbor Limestone, Eucla Basin, Western Australia.

#### Acknowledgements

The author thanks Val Hogan, Frank Job and Sandra Winchester (Library, Museum of Victoria) for providing assistance in locating manuscripts and for arranging inter-library loans; Drs Neil Archbold (Deakin University), David Holloway (Museum of Victoria) and Peter Jell (Queensland Museum) for advice and encouragement over the last few years; Dr Ken McNamara (Western Australian Museum) for supporting the project and assisting with references on Australian Palaeozoic and Mesozoic echinoids; Drs Bruno David (Université de Bourgogne, Dijon) and Andrew Smith (Natural History Museum, London) for supplying information not available in Australia; and Philip Irwin (Deakin University) and Andrew Sandford (Museum of Victoria) for pointing out several omissions. The author is also indebted to Enid Holmes for her support and constant assistance in checking revisions.

# The fauna of the Pranjip-Creightons Creek system of northern Victoria

Nicholas A. O'Connor

Department of Ecology and Evolutionary Biology, Monash University, Clayton, Victoria 3168, Australia  
Present address : Department of Environmental Management, Victoria University of Technology, St Albans Campus, P.O. Box 14428 MMC, Melbourne, Victoria 3000 Australia

Abstract. O'Connor, N.A. (1993). The fauna of the Pranjip-Creightons Creek system of northern Victoria. *Occasional Papers from the Museum of Victoria* 6: 54–60

The macroinvertebrate and fish fauna are listed for ten sites on the Pranjip-Creightons Creek system of northern Victoria.

## Introduction

The Pranjip-Creightons Creek system is a small lowland stream system draining the southwestern arm of the Strathbogie Ranges of north-central Victoria. The system has two main branches, the Pranjip Creek branch which consists of intermittent streams draining the peripheral slopes of the Strathbogie Ranges, and the Creightons Creek branch which consists of perennial streams arising from further within the Ranges. The headwater and midsections of the Creightons Creek branch, in particular, have been severely affected by large quantities of sand washed in from eroding creek banks along the headwaters. These sections of the stream system have a sandy substrate and little riparian vegetation. Further downstream, where the sand has yet to reach, Creightons and Pranjip Creeks have a muddy substrate, steep banks, a narrow but continuous belt of riparian river redgum

(*Eucalyptus camaldulensis*) and large quantities of submerged wood (O'Connor, 1991a, 1992). Ten sites along the system were sampled for macroinvertebrates on five occasions between winter 1984 and winter 1985 (Tables 1, 2). Details of the sampling procedures and further descriptions of study sites are given in O'Connor (1991b) and O'Connor and Lake (in press). Fish were also sampled on two occasions at each site by electrofishing (see O'Connor, 1991b for details) (Table 3). Three remaining species of aquatic vertebrates which were sighted incidentally along the system are listed here due to a paucity of published records of such observations. These were platypus (*Ornithorhynchus anatinus*) at Site 10, water rat (*Hydromys chrysogaster*) at Sites 9 and 10, and long-necked tortoise (*Chelodina longicollis*) at Sites 6 and 10.

Table 1. National map grid references and latitudes and longitudes for the ten study sites on the Pranjip-Creightons Creek system.

Site	National Map Name and no.	Grid reference	Latitude and Longitude	Site name
1	Euroa 8024	CV711107	36°56"S, 145°33"E	Creightons Creek
2	Euroa 8024	CV691153	36°53"S, 145°20"E	Tributary of Creightons Creek
3	Euroa 8024	CV690154	36°53"S, 145°20"E	Creightons Creek
4	Euroa 8024	CV687155	36°52"S, 145°20"E	Tributary of Creightons Creek
5	Euroa 8024	CV678235	36°49"S, 145°10"E	Creightons Creek
6	Nagambie 7924	CV602314	36°45"S, 145°25"E	Branjee Creek (anabranh of Creightons Creek)
7	Nagambie 7924	CV557353	36°43"S, 145°23"E	Branjee Creek
8	Nagambie 7924	CV496377	36°42"S, 145°19"E	Creightons Creek
9	Nagambie 7924	CV478383	36°42"S, 145°18"E	Pranjip Creek
10	Nagambie 7924	CV485465	36°36"S, 145°19"E	Pranjip Creek



Table 2. Macroinvertebrate fauna recorded from the Pranji-Creightons Creek system. The mean abundance of each species at each site has been log (x+1) transformed and coded into 3 classes with back-transformed upper limits of 3, 20, and 500.

SITE											SITE										
TAXA	1	2	3	4	5	6	7	8	9	10	TAXA	1	2	3	4	5	6	7	8	9	10
ARTHROPODA											<i>Tanytarsus</i> spp.	1	1	1	1	-	1	2	2	2	2
INSECTA											<i>Tanytarsus inextentus</i> group SRV2	-	-	2	-	-	-	1	1	2	1
EPHEMEROPTERA											<i>Rheotanytarsus</i> MV4	1	2	2	1	1	1	2	1	2	1
Baetidae											<i>Paratanytarsus</i> sp.	-	-	-	-	-	-	-	1	-	-
<i>Baetis</i> MV4	2	2	3	3	1	2	2	1	1	1	<i>Stempellina</i> sp.	-	1	1	-	-	-	-	1	1	1
<i>Baetis</i> sp.	-	-	-	2	-	-	-	-	-	-	Orthoclaadiinae										
<i>Cloeon</i> sp.	-	-	-	-	-	-	-	1	1	2	<i>Corynoneura australiensis</i> Freeman	1	1	-	1	1	1	1	-	-	-
Leptophlebiidae											<i>Corynoneura scutellata</i> Winnertz	-	-	1	-	-	-	-	-	-	-
<i>Ulmerophlebia</i> sp.	1	1	1	-	-	-	-	-	-	-	<i>Thienemanniella trivittata</i> Goetghebuer	1	2	-	1	1	1	1	1	2	1
<i>Koormonga</i> MMBW2	-	-	-	-	-	-	-	-	-	1	near <i>Parasmittia</i> sp.1	-	-	1	-	-	-	1	1	-	1
<i>Koormonga</i> sp.2	1	-	1	-	-	-	1	-	-	1	near <i>Parasmittia</i> sp.2	-	-	-	-	-	-	-	1	-	-
<i>Koormonga</i> sp.3	1	-	-	-	-	-	-	-	-	-	<i>Cricotopus annuliventris</i> Skuse	-	1	-	1	1	2	2	1	-	1
<i>Nousia</i> ? <i>fuscula</i>	2	2	1	1	-	1	1	1	1	-	<i>Cricotopus</i> spp.	1	-	1	-	1	1	-	1	2	1
<i>Nousia</i> sp.	1	-	-	-	-	-	-	-	1	-	<i>Parakiefferiella</i> SRV40 (MV12BE)	1	-	-	1	-	1	1	1	2	1
<i>Centropitulum</i> sp.1	-	1	1	1	-	-	-	1	-	1	<i>Eukiefferiella</i> SRV62 (MV70E)	1	-	-	1	-	1	-	-	1	1
<i>Centropitulum</i> sp.2	-	-	-	-	-	-	1	-	-	1	Orthoclaadiinae SRV38 (MV2E)	-	-	-	1	-	-	-	-	-	1
<i>Centropitulum</i> sp.3	-	-	-	-	-	-	1	-	-	-	<i>Stictocladus</i> SRV39 (MV9E)	3	2	2	1	-	-	-	-	-	-
<i>Atalophlebia australasica</i> (Pictet)	-	-	-	-	-	1	1	1	1	-	<i>Cardiocladus australiensis</i> Freeman	-	-	-	-	-	1	-	-	-	-
<i>Atalophlebia australis</i>	-	-	-	-	-	-	-	-	1	-	<i>Nanocladus</i> MV93	-	-	-	-	-	-	1	-	-	-
<i>Atalophlebia</i> sp.1	-	1	1	1	1	1	1	1	1	-	Orthoclaadiinae SRV82	-	1	-	-	-	-	-	-	-	1
<i>Atalophlebia</i> MMBW9	-	-	-	1	-	-	-	-	-	-	Tanypodinae										
<i>Atalophlebia</i> MMBW4	1	1	1	-	-	-	-	-	-	-	<i>Procladius paludicola</i> Skuse	1	1	1	-	-	1	2	2	2	-
<i>Atalophlebia</i> (immature)	-	-	-	-	-	-	-	1	1	-	<i>Paramerina</i> near <i>levidensis</i>	1	1	1	1	-	1	2	1	1	1
<i>Atalophlebia</i> spp.	-	-	-	-	-	-	-	-	1	1	<i>Apsectrotanypus maculosus</i> Freeman	1	2	2	1	-	-	-	1	1	-
<i>Austrophlebioides</i> ? <i>pusillus</i> (Harker)	2	1	1	-	-	-	-	-	-	-	? <i>Pentaneura</i> SRV2 (MV32)	1	2	-	1	1	1	-	1	-	-
Oniscigastridae											<i>Ablabesmyia notabilis</i> Skuse	-	-	-	-	-	-	1	-	-	-
<i>Tasmanophlebia</i> ? <i>luciscoeroli</i>	1	1	-	-	-	-	-	-	1	1	<i>Coelopynia pruinosa</i> Freeman	-	-	-	-	-	-	2	1	-	-
Caenidae											Diamesinae										
<i>Tasmanocaenis tillyardi</i> Lestage	1	2	3	3	3	3	2	1	1	1	? <i>Paraheptagyia</i> sp.1	-	-	1	-	1	1	-	-	1	1
DIPTERA											? <i>Paraheptagyia</i> sp.2	-	-	-	-	-	-	-	1	-	1
Chironomidae											Podonomiinae										
Chironominae											<i>Podonomopsis</i> SRV84	2	1	-	-	-	-	-	-	-	-
<i>Chironomus alternans</i> group	-	1	-	-	1	1	1	2	2	1	Ceratopogonidae										
<i>Harnischia</i> MV68	-	-	1	-	-	-	1	1	1	-	? <i>Stilobezzia</i> sp.	-	1	-	-	-	-	-	-	-	1
<i>Cryptochironomus grisiedorsum</i> Kieffer	-	-	-	1	-	-	1	1	1	1	? <i>Stilobezzia</i> SRV8	1	1	1	-	-	-	-	1	2	-
<i>Cladopelma curtivalva</i> Kieffer	-	-	-	-	-	-	1	2	2	1	? <i>Stilobezzia</i> nr SRV18	-	-	-	-	-	-	-	-	-	1
<i>Riethia</i> MV5	-	-	-	1	1	1	3	1	1	1	<i>Bezzia</i> SRV20	1	1	1	1	1	1	1	1	1	-
<i>Parachironomus</i> MV104	-	-	-	-	-	-	-	-	1	1	<i>Bezzia</i> SRV26 (MV6)	-	1	-	1	1	-	-	-	-	-
<i>Kiefferulus martini</i> Freeman	-	-	-	-	-	-	-	-	1	1	<i>Bezzia</i> SRV5	-	-	-	-	-	-	1	-	-	-
<i>Microchironomus</i> SRV43	3	2	-	2	1	1	1	1	-	1	<i>Atrichopogon</i> sp.	-	-	2	-	1	-	-	-	-	-
<i>Dicrotendipes</i> MV30	-	-	1	-	-	-	-	1	1	2	<i>Atrichopogon</i> SRV2	-	-	1	-	-	-	-	-	-	-
<i>Stenochironomus</i> MV3	-	1	1	1	1	1	-	-	1	2	<i>Dasyhelea</i> SRV4 (MV4)	-	-	-	-	-	1	-	-	-	-
<i>Polypedilum oresitrophum</i> Skuse	1	1	1	1	1	1	1	1	1	1	Ceratopogonidae (immature)	-	-	1	1	-	-	-	1	1	-
<i>Polypedilum tonnoiri</i> Freeman	-	1	-	1	-	-	2	2	2	3	Simuliidae										
<i>Polypedilum seorsum</i> Skuse	-	-	1	-	-	-	-	-	2	1	<i>Austrosimulium furiosum</i> (Skuse)	2	2	-	1	1	1	1	1	2	1
<i>Cladotanytarsus</i> MV122	-	1	1	-	1	1	2	1	2	3	<i>Simulium ornatipes</i> Skuse	1	1	-	1	1	-	-	-	-	-
											Stratiomyidae										
											near <i>Myxosargus</i> sp.1	-	-	-	-	-	-	1	-	-	-
											near <i>Myxosargus</i> sp.2	-	-	1	-	-	-	-	-	-	-
											? <i>Odontomyia</i> sp.1	1	-	-	-	-	-	-	-	-	-





	TAXA	1	2	3	4	5	6	7	8	9	10
<i>Chostonectes nebulosus</i> (A)	-	-	-	-	-	-	-	-	-	1	-
<i>Chostonectes gigas</i> (A) Boh.	-	-	-	-	-	-	-	-	-	-	1
<i>Platynectes decemaculatus</i> (A) Fab.	1	-	-	-	-	-	-	-	-	-	-
<i>Platynectes</i> sp.1 (L)	1	-	-	-	-	-	-	-	-	-	-
? <i>Platynectes</i> sp.2 (L)	-	-	1	-	-	-	-	-	-	-	-
<i>Platynectes</i> sp.3 (L)	-	1	-	-	-	-	-	-	-	-	-
<i>Sternopriscus mundanus</i> (A)	-	-	1	1	1	-	1	-	-	-	-
<i>Sternopriscus</i> sp. (L)	-	-	1	-	-	-	-	-	-	-	-
<i>Antiporus femoralis</i> (A) Boh.	-	-	-	-	-	1	-	-	-	-	-
<i>Antiporus ?gilberti</i> (L) Clark	-	-	-	-	-	-	-	1	-	-	-
<i>Allodessus bistrigatus</i> (A) Clark	-	-	1	-	-	-	-	-	-	-	1
<i>Carabhydrus niger</i> (A)	-	1	-	-	-	-	-	-	-	-	-
<i>Megaporus howitti</i> (A)	-	-	-	-	-	-	1	-	-	-	-
<i>Lancetes lanceolatus</i> (A) Clark	-	-	-	-	-	-	-	1	-	-	-
Psephenidae											
<i>Sclerocyphon striatus</i> (L) Lea	-	1	1	1	-	-	-	-	-	-	-
Hydraenidae											
<i>Octhebius</i> sp.(A)	-	-	-	-	1	-	-	-	-	-	-
Hydraenidae sp.1 (A)	-	-	-	-	-	1	-	-	-	-	-
Hydraenidae sp.2 (A)	-	-	-	-	-	1	-	-	-	-	-
Hydraenidae sp.3 (A)	-	-	-	-	-	-	-	1	-	-	-
Hydraenidae sp.4 (A)	-	-	1	-	-	-	-	-	-	-	-
Hydraenidae sp.5 (A)	-	-	-	-	-	1	-	-	-	-	-
Hydraenidae sp.1 (L)	-	-	-	1	-	-	-	-	-	-	-
Curculionidae											
? <i>Curculionidae</i> sp. (L)	-	-	-	-	-	-	-	-	-	-	2
Helodidae											
? <i>Cyphon</i> sp.1 (L)	2	2	1	1	-	-	-	-	-	-	-
? <i>Cyphon</i> sp.2 (L)	1	-	-	-	-	-	-	-	-	-	-
? <i>Cyphon</i> sp.3 (L)	-	-	-	-	-	-	-	1	-	-	-
Ptilodactylidae											
? <i>Byrrocrptus</i> sp.1 (L)	1	-	-	-	-	-	-	-	-	-	-
Gyrinidae											
<i>Macrogyrus viridisulcatus</i> (A) Mjöberg	-	-	-	-	-	-	-	-	-	2	-
<i>Aulonogyrrus strigosus</i> (A) (Fab.)	-	-	1	-	1	1	-	-	-	-	2
Gyrinidae sp.1 (L)	-	-	-	-	-	1	-	-	-	-	2
Gyrinidae sp.2 (L)	-	-	-	-	-	-	-	-	-	-	1
Gyrinidae sp.3 (L)	1	-	-	-	-	-	-	-	-	-	-
Gyrinidae sp.4 (L)	-	-	-	-	-	-	-	-	-	1	-
Hydrochidae											
<i>Hydrochus</i> sp.1 (A)	-	-	-	-	-	1	-	-	-	-	-
<i>Hydrochus</i> sp.2 (A)	-	-	-	-	-	1	-	-	-	-	-
Limnichidae											
Limnichidae sp. (A)	-	-	-	-	-	-	-	-	-	-	1
ODONATA											
Anisoptera											
Gomphidae											
<i>Hemigomphus</i> sp.1	-	-	1	1	-	-	-	-	-	-	-
<i>Hemigomphus</i> sp.2	-	-	-	1	-	-	-	-	-	-	-
<i>Austrogomphus ochraceus</i> (Selys)	-	-	-	-	-	-	-	1	1	-	-

	SITE									
TAXA	1	2	3	4	5	6	7	8	9	10
<i>Archichauliodes</i> sp.	-	-	-	1	-	-	-	-	-	-
ARACHNIDA										
HYDRACARINA										
Hygrobatidae										
<i>Kallimobates australicus</i>	-	-	-	-	1	-	-	-	-	2
<i>Gondwanabates</i> sp.nov.	-	1	1	-	-	-	-	-	-	2
<i>Australiobates</i> sp.	-	1	1	1	1	1	1	-	-	-
? <i>Aspidiobates</i> sp.	-	-	-	-	1	-	-	-	-	-
<i>Corticacarus</i> spp.	-	1	1	-	1	1	1	-	-	1
Hydracarina sp.1	-	-	1	-	-	-	-	-	-	-
Hydracarina sp.2	-	-	-	-	-	1	-	-	-	-
Hydracarina sp.3	-	-	-	-	-	1	-	-	-	1
Aturidae										
<i>Axonopsella</i> sp.	-	-	-	-	-	1	-	-	-	-
CRUSTACEA										
OSTRACODA										
Candonidae										
<i>Candonocypris novaezealandiae</i>	-	-	1	-	-	-	-	-	-	1
<i>Candonocypris</i> sp.	-	-	2	-	-	-	-	-	-	-
Candonidae spp.	1	2	1	1	1	1	2	2	3	1
Cypridae										
<i>Ilyocypris australiensis</i> Sars	1	1	-	-	1	1	2	2	2	1
<i>Ilyodromus</i> sp.	1	1	1	-	1	-	1	1	1	-
<i>Cypretta</i> sp.	-	1	1	-	-	-	-	1	1	-
<i>Cypridopsis funebris</i>	-	-	-	-	1	1	1	1	1	1
Ostracoda sp.	-	-	1	-	-	-	-	-	-	-
CLADOCERA										
Macrothricidae										
<i>Macrothrix</i> sp.	-	-	-	-	-	-	-	1	1	1
<i>Ilyocryptus</i> sp.	1	-	1	1	1	1	1	1	1	1
Chydoridae										
<i>Leydigia</i> sp.	-	1	1	-	-	1	1	2	1	2
<i>Camptocercus australis</i> Sars	-	-	-	-	-	-	-	1	-	2
<i>Pleuroxus</i> sp.	-	-	-	-	-	1	1	1	1	1
<i>Alona</i> sp.	-	-	-	-	-	-	1	1	1	1
<i>Graptoleberis testudinaria</i>	-	-	-	-	-	-	-	-	-	1
Daphniidae										
<i>Simocephalus exspinosus</i>	-	-	-	-	-	-	1	1	1	1
<i>Scapholeberis kingi</i>	-	-	-	-	-	-	-	-	-	1
COPEPODA										
Cyclopoida										
<i>Paracyclops chiltoni</i>	-	-	-	1	-	-	-	-	1	1
<i>Acanthocyclops robustus</i> Sars	-	-	1	-	-	1	1	1	1	1
<i>Macrocyclus albidus</i>	1	-	-	-	-	-	-	1	1	1
<i>Eucyclops</i> spp.	1	-	-	1	1	1	1	1	1	2
Calanoida										
<i>Boeckella triarticulata</i>	-	-	-	-	-	-	-	-	-	1
Harpactacoida										
Harpactacoida spp.	1	-	1	-	-	-	-	1	1	1
DECAPODA										



[illegible]

Table 3. Fish species and their abundance at each site. The first column for each site contains the number of fish caught by electrofishing in autumn (April 1985) and the second the number caught in spring (October 1985). The total number of fish caught in autumn was 148 and in spring, 13. Note that site 10 was too deep to sample in spring.

Species	Family*	Site									
		1	2	3	4	5	6	7	8	9	10
<i>Galaxias olidus</i>	Gal	-,-	-,-	-,-	2,-	67,3	2,6	52,-	-,-	-,-	-,-
<i>Gadopsis marmoratus</i>	Gad	-,-	-,3	-,-	-,-	-,-	-,-	-,-	-,-	-,-	1,-
<i>Nannoperca australis</i>	Kuh	-,-	-,-	-,-	-,-	1,-	-,-	-,-	-,-	-,-	-,-
<i>Hypseleotris ?klunzingeri</i>	Ele	-,-	-,-	-,-	-,-	1,-	-,-	1,-	-,-	-,-	-,-
<i>Retropinna semoni</i>	Ret	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-
<i>Perca fluviatilis</i> †	Per	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	3,-
<i>Tinca tinca</i> †	Cyp	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	-,-	1,-
<i>Cyprinus carpio</i> †	Cyp	-,-	-,-	-,-	-,-	-,-	-,-	4,-	-,-	-,1	13,-
Total		-,-	-,3	-,-	2,-	69,3	2,6	57,-	-,-	-,1	18,-

\* Gal = Galaxiidae, Gad = Gadopsidae, Kuh = Kuhliidae, Ele = Eloetridae, Ret = Retropinnidae, Per = Percidae, Cyp = Cyprinidae.  
† = exotic species

References

O'Connor, N.A. 1991a. The effects of habitat complexity on the macroinvertebrates colonising wood substrates in a lowland stream. *Oecologia* 85:504–512

O'Connor, N.A. 1991b. *The ecology of a northern Victorian lowland stream system*. Ph.D Thesis, Department of Ecology and Evolutionary Biology, Monash University, Clayton, Victoria.

O'Connor, N.A. 1992. Quantification of submerged wood in a lowland Australian stream system. *Freshwater Biology* 27 : 387–395.

O'Connor, N.A and Lake, P.S. 1993. Long term and seasonal large scale disturbances of a small lowland stream. *Australian Journal of Marine and Freshwater Research* (in press).

















Table of Contents

Catalogue of Recent Cnidaria type specimens in the Museum of Victoria  
T. N. Shanks.....1

Australian fossil echinoids: annotated bibliography and list of genera and species  
Francis C. Holmes.....27

The fauna of the Pranjip-Creightons Creek system of northern Victoria  
Nicholas A. O'Connor.....54

P 507  
N 2770P